



SEQUENCE LISTING

<110> INNOGENETICS N.V.

<120> New sequences of hepatitis C virus genotypes and their use as prophylactic, therapeutic and diagnostic agents.

<130> 2551-106

<140> US 09/851,138

<141> 2001-05-09

<150> EP 94870166.9

<151> 1994-10-21

<150> EP 95870076.7

<151> 1995-06-28

<160> 302

<170> PatentIn version 3.1

<210> 1

<211> 327

<212> DNA

<213> hepatitis C virus

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ggccccaggn ngggtgtgcg cgcgactagg aagacttccg agcggtcaca acctcgtggc      180
aggcgacagc ctatccccaa ggctcgycgg yccgagggca ggtcctgggc tcagcccggg      240
tatccttggc cctctatgg caatgagggc tgcgggtggg cgggntgget cctgtccccc      300
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<213> hepatitis C virus

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1 5 10 15

Arg Arg Pro Xaa Xaa Xaa Xaa Xaa Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Xaa Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Xaa Arg Xaa Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro
100 105

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gctttgctgt cctgcttgac ggttccaack accgctcag aggtgcgcaa cgcacccggg 120
gtgtatcatg tcaccaacga ctgttccaac tcgagcatca tctatgagat ggacggtatg 180

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atcatgcaact acccaggggtg cgtgccctgc gttcgggagg ataaccatct ccgctgctgg 240
atggcgctca cccccacgct tgcggtcaaa aaygctagtg tccccactrc ggcaatccga 300
cgtcacgtcg acttgcttgt tgggggnnc acgttctgtt ccgctatgta cgtgggrgac 360
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Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Xaa Thr Ala
20 25 30

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Asp Gly Met Ile Met His Tyr
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asp Asn His Leu Arg Cys Trp
65 70 75 80

Met Ala Leu Thr Pro Thr Leu Ala Val Lys Xaa Ala Ser Val Pro Thr
85 90 95

Xaa Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Xaa Xaa Thr Phe
100 105 110

Cys Ser Ala Met Tyr Val Xaa Asp Leu Cys Gly Ser Val Phe Leu Ala
115 120 125

Gly Gln Leu Phe Thr Phe Ser Pro Arg Met His His Thr Thr Gln Glu
130 135 140

Cys Asn Cys Ser Ile
145

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ggccccaggt tgggtgtgcg cgcgaccagg aagacttccg agcggtcgca gcctcgtgac 180
aggcgacagc ctattcctaa ggctcgccag tccgatggca gnnccctgggc tcagccaggg 240
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cgcggtcttc ggcccagttg gggcccc 327

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Arg Arg Pro Gln Asp Val Lys Xaa Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Asp Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Gln Ser Asp Gly Xaa Xaa Trp Ala Gln Pro Gly
 65 70 75 80

His Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro
 100 105

<210> 7
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 gtatatcatc tcaccaatga ctgttccaac tcgagcatca tctatgagat gagtgggatg 180
 atcttgcacg cccaggggtg tgtgccctgc gttcgggaga acaactcttc tcgttgctgg 240
 atgccrctca ccccccacgt tgcgggtcaaa gacgctaata tccctactgc ggcaatccga 300
 cgccatgtcg acttgctggt tgggacagcc gcgtttcggt ccgctatgta cgtggggggac 360
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Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
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Ile Phe Leu Leu Ala Phe Leu Ser Cys Leu Thr Val Pro Thr Thr Ala
20 25 30

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp
65 70 75 80

Met Xaa Leu Thr Pro Thr Leu Ala Val Lys Asp Ala Asn Val Pro Thr
85 90 95

Ala Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Thr Ala Ala Phe
100 105 110

Arg Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val
115 120 125

Gly Gln Leu Phe Thr Phe Ser Pro Arg Leu Tyr His Thr Thr Gln Glu
130 135 140

Cys Asn Cys Ser Ile
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ggccctagat tgggtgtgcg cgcagcgcg g aagacttcgg agcggtcgca acctcgtggg 180
aggcgccaac ctattcccaa ggagcgccga cccgagggca ggt 223

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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30
Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45
Ala Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60
Ile Pro Lys Glu Arg Arg Pro Glu Gly Arg
65 70

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ggccccaggt tgggtgtgcg cgcgacgagg aagacttccg agcgggtcgca acctcgcgga      180
aggcgacagc ctatcccca a ggctcgccga cccgagggca ggtcctgggc tcagcctggg      240
taccatggc cctctatgc taacgagggc tgcggatggg cgggatggct cctgtcccct      300
cgcggctccc gtcttagctg gggccccaat gacccccgac gtagatcacg caatttggt      360
aaggtcacg ataccctaac gtgtggcttc gccgatctca tggggtacat tccgctcgtc      420
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ggcgtgatnn nnnnnnnnn naaccttcn ggttgcctt tnnctatctt cctcttggcn      540
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taccatgtca ctaatgactg ttccaacggc agcatcgat atgaggcaaa ggacatcatc      660
cttcacagc ctgggtgngt gccctgcata cgggaaggca atatctcccg ttgctgggta      720
ccgctcacc ccacgctcgc agcgcggatc gcgaacgctc ccacgatga ggtgcggcgt      780
cacgtcgacc tctcgtggg ggcagccgtg ttctgctcag ccacgtacat tggggacott      840
tgtgggggcg tcttcctcgt tgggcaattg ttcacctca cgtcccggcg gcattggacg      900
gtgcaggact gtaattgttc catttactct ggccacataa cgggccaccg nnnnnnn      957

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<210> 12
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<213> hepatitis C virus

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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140

Gly Gly Ala Ser Arg Thr Leu Xaa His Gly Val Arg Val Leu Xaa Gly
145 150 155 160

Gly Val Xaa Xaa Xaa Xaa Xaa Asn Leu Xaa Gly Cys Ser Xaa Xaa Ile
165 170 175

Phe Leu Leu Xaa Leu Leu Ser Cys Leu Thr Val Pro Thr Ser Ala Tyr
180 185 190

Glu Val His Ser Thr Thr Asp Gly Tyr His Val Thr Asn Asp Cys Ser
195 200 205

Asn Gly Ser Ile Val Tyr Glu Ala Lys Asp Ile Ile Leu His Thr Pro
210 215 220

Gly Xaa Val Pro Cys Ile Arg Glu Gly Asn Ile Ser Arg Cys Trp Val
225 230 235 240

Pro Leu Thr Pro Thr Leu Ala Ala Arg Ile Ala Asn Ala Pro Ile Asp
245 250 255

Glu Val Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Val Phe Cys
260 265 270

Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Thr Ser Arg Arg His Trp Thr Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Ile Thr Gly His Xaa Xaa Xaa
305 310 315

<210> 13
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ggccccagat tgggtgtgag cgcgacgaga aagacttctg aacggtccca gccacgtgga 180
aggcgccagc ccacccctaa agatcggngh gccactggca ggtcctgggg acgtccagga 240
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cgaggctctc 310

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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Xaa Ala Thr Gly Arg Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly
100 105

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Thr Cys Xaa Xaa Ala Asp Leu Met Gly Tyr Xaa Pro Val Val Gly Ala
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Pro Val Gly Gly Xaa Ala Arg Ala Leu Ala Xaa Gly Val Arg Val Leu
 20 25 30

Glu Asp Gly Ile Asn Tyr Xaa Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Xaa Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser
 50 55 60

Xaa Val Glu Val Lys Asn Thr Ser Gln Ala Tyr Met Ala Thr Asn Asp
65 70 75 80

Cys Ser Asn Asn Ser Ile Val Trp Gln Leu Xaa Asp Ala Val Leu His
85 90 95

Val Pro Gly Cys Val Pro Cys Glu Asn Ser Ser Gly Arg Phe His Cys
100 105 110

Trp Ile Pro Ile Ser Pro Asn Ile Ala Val Ser Lys Pro Gly Ala Leu
115 120 125

Thr Lys Gly Leu Arg Ala Arg Ile Asp Ala Val Val Met Ser Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile
145 150 155 160

Ala Ala Gln Ala Phe Ile Val Ala Pro Lys Arg His Tyr Phe Val Gln
165 170 175

Glu Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 17
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taccettggc cctgtacgg gaacgagggc ctcggtggg cagggtggt cctgtcccc 300
cggggtctc gccctcgtg gggcccaaac gaccccggc acaggtcac caacttggt 360
aaggtcatcg ataccctcac gtgtggcttt gscgacctca tgggtacat acctgtcgtc 420
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tacatggcga ctaatgactg tgccaatgac agcatcgtct ggcagctcag ggacgcggtg 660
ctccatgttc ctggatgtgt cccctgtgag aggtcaggta ataggacctt ctgttgaca 720
gcggtctcgc ccaacgtggc tgtgagccga cctgggtgctc tcaactagagg tctgcgggt 780
cacattgata ccacgtgat gtccgccacc ctctgctctg ccctatacat aggggacct 840
tgcggcgctg tgatgatagc agcgcaagtt gccgtcgtct caccgcaata ccatactttt 900
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<210> 18
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Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn

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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala	35	40	45
Pro Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro	50	55	60
Ile Pro Lys Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg Pro Gly	65	70	75
Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp	85	90	95
Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro	100	105	110
Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys	115	120	125
Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val	130	135	140
Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp	145	150	155
Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile	165	170	175
Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala Ile	180	185	190
Gln Val Lys Asn Asn Ser His Phe Tyr Met Ala Thr Asn Asp Cys Ala	195	200	205
Asn Asp Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro	210	215	220
Gly Cys Val Pro Cys Glu Arg Ser Gly Asn Arg Thr Phe Cys Trp Thr	225	230	235
			240

Ala Val Ser Pro Asn Val Ala Val Ser Arg Pro Gly Ala Leu Thr Arg
245 250 255

Gly Leu Arg Ala His Ile Asp Thr Ile Val Met Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Ile Ala Ala
275 280 285

Gln Val Ala Val Val Ser Pro Gln Tyr His Thr Phe Val Gln Glu Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa
305 310 315

<210> 19
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 19
gacggggtaa attatgcaac agggaaatctg cctgggttgc ttttctctat cttcttgttg 60
gtctttctgt cttgtgtcac cgtgcctgtc tctgccgtgc aggttaagaa caccagtacc 120
atgtacatgg caaccaatga ctgttccaac aacagcatca tctggcaaatt gcagggcgcg 180
gtgcttcatg ttctggatg tgtcccggtg gagttgcagg gcaataagtc ccggtgctgg 240
ataccgggtca ctcccaacgt ggctgtgaac cagcccggcg cctcactag gggcttgccg 300
acgcacattg acaccatcgt gatggtcgct acgctctgtt ctgcactcta catcggggac 360
gtgtgtggcg cggatgatgat agctgctcag gttgtcattg tctgcgcgca acatcacaac 420
ttttcccagg attgcaattg ttccatc 447

<210> 20
<211> 149
<212> PRT
<213> hepatitis C virus

<400> 20

Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala
20 25 30

Val Gln Val Lys Asn Thr Ser Thr Met Tyr Met Ala Thr Asn Asp Cys
35 40 45

Ser Asn Asn Ser Ile Ile Trp Gln Met Gln Gly Ala Val Leu His Val
50 55 60

Pro Gly Cys Val Pro Cys Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Thr Pro Asn Val Ala Val Asn Gln Pro Gly Ala Leu Thr
85 90 95

Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Met Val Ala Thr Leu
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Ala Val Met Ile Ala
115 120 125

Ala Gln Val Val Ile Val Ser Pro Gln His His Asn Phe Ser Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 21

<211> 310

<212> DNA

<213> hepatitis C virus

<400> 21

atgagcacaa atcctaaacc tcaaagaaaa accaaaagaa acactaacgg ccgcccacag 60

gacgttaagt tcccgggcgg tggccagatc gttggcggag tataacttggt gccgcgcagg 120

ggcccccggt tgggtgtgcg cgcgacgagg aaaacttccg aacggtccca gccacgtggg 180
 aggcgccagc ccataccctaa agatcggcgc tccactggca aatcctgggg acgtccagga 240
 tacccttggc cctgtatgg gaacgagggc cttggttggg caggatggct cttgtcccct 300
 cgaggtctctc 310

<210> 22
 <211> 48
 <212> PRT
 <213> hepatitis C virus

<400> 22

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Arg Ser Leu Ala
 20 25 30

Glu Tyr Thr Cys Ala Arg Arg Gly Lys Leu Arg Arg Ser Ser Met Gly
 35 40 45

<210> 23
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 23
 gacgggataa actacgcaac agggaatctg cccggttgc cttttctat cttcttgcgtg 60
 gccttgcctat cctgtctcac tgtgccggcg tccgctgtgc aggtcaagaa caccagccac 120
 tcttatatgg tgaccaatga ttgctcaaac agcagcattg tctggcagct taaggatgct 180
 gtgcttcaag tccctggatg tgttccatgt gagaggcacc aaaatcagtc tcgctgctgg 240
 atacctgtga cacccaatgt ggccgtgagc caacctggcg cgtcaccag gggtttgccg 300
 acgcacattg acaccatcgt tgcgtctgct accgtctgct cagctttgta tgtggggcgac 360
 ttctgcggcg cagtgatgtt ggtctctcaa tttttcatga tctcccctca gcaccacatc 420

ttcgtccagg attgcaactg ctcgata

447

<210> 24
<211> 149
<212> PRT
<213> hepatitis C virus

<400> 24

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Val Gln Val Lys Asn Thr Ser His Ser Tyr Met Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Val Trp Gln Leu Lys Asp Ala Val Leu His Val
50 55 60

Pro Gly Cys Val Pro Cys Glu Arg His Gln Asn Gln Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Thr Pro Asn Val Ala Val Ser Gln Pro Gly Ala Leu Thr
85 90 95

Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Ala Ser Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Phe Cys Gly Ala Val Met Leu Val
115 120 125

Ser Gln Phe Phe Met Ile Ser Pro Gln His His Ile Phe Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 25

<211> 356
<212> DNA
<213> hepatitis C virus

<400> 25
gacgggataa actatgcaac agggaaacctg cctgggttgc ccttttctat cttcttactg 60
gccttgcttt cttgcatcac cgtgccggtc tctgccgtgc aagttgcgaa ccgcagtggc 120
tcttacatgg tgaccaatga ttgctcgaac agcagcatcg tttggcagct cgaggaggcc 180
gtccttcacg tccctggatg tgttccctgt gagtgggaagg acaacacctc ccgtctctgg 240
ataccgggtca cccctaacat cgctgtgagc caacctggcg cgcttaccaa gggcctgcgg 300
acacatattg acatcattgt cgcgtccgcc acgtttctgt ctgccttgta tgtggg 356

<210> 26
<211> 118
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

<400> 26

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala
20 25 30

Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Glu Ala Val Leu His Val
50 55 60

Pro Gly Cys Val Pro Cys Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Thr Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Xaa Thr
85 90 95

Lys Gly Leu Arg Thr His Ile Asp Ile Ile Val Ala Ser Ala Thr Phe
100 105 110

Cys Ser Ala Leu Tyr Val
115

<210> 27
<211> 310
<212> DNA
<213> hepatitis C virus

<220>
<221> misc feature
<222> (283)..(284)
<223> n represents any nucleotide

<400> 27
atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg ccgccccatg 60
gacgttaagt tcccgggtgg tggccagatc gttggcggag tttacttggt gccgcgcagg 120
ggccccaggt tgggtgtgcy cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180
agacgccaac ctatcccca ggcgcgtcga tccgagggaa ggtcctgggc acagccagga 240
tatccatggc ctctttacgg taatgagggg tgcgggtggg cannatggct cttgtccccc 300
cgcggttctc 310

<210> 28
<211> 117
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

<400> 28

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg
115

<210> 29

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 29

gacgggatca attttgcaac agggaaacctc cccggttgct ccttttctat ctccctcttg 60

gcactcctct cgtgcctgac tgtccccgct tcggccatca actatcgcaa tgtctcgggc 120

atttactatg tcaccaatga ttgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180

atcttgcaac tcccaggttg cgtgccctgc gtgagagagg ggaatcagtc acgttgctgg 240

gtagccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg 300

agtcatgtgg acttgatggg gggggccgcc actgtttgtt cagcccttta catcggggat 360

ttrtgtggyg gcttgttcct agtcgggtcag atgtttcttt tccgaccaag gcgccactgg 420

actactcaag attgcaattg ttccatc 447

<210> 30

<211> 149

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (121)..(121)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (123)..(123)

<223> Xaa represents any amino acid

<400> 30

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
 100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Xaa Cys Xaa Gly Leu Phe Leu Val
 115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
 130 135 140

Cys Asn Cys Ser Ile
 145

<210> 31
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 31
 gacgggatca attatgcaac agggaacctt cccggttgct ctttttctat cttcctcttg 60
 gcaactcctct cgtgcctgac tgttcccgtc tcggccatta actaccgcaa cacctcgggc 120
 atctaccacg tcaccaatga ctgcccgaac tcgagcatag tttatgaggc cgaccaccac 180
 atcttgcaac ttccagggtg cgtgccctgc gtgagaactg ggaatcagtc acgttgctgg 240
 gtggccctta ctctaccgt cgcagcgcca tacatcggcg caccgcttga gtctctgcgg 300
 agtcatgtgg atctgatggg gggggctgcc actgtttgct cagcccttta catcggggat 360
 ttgtgtggcg gcttgttctt ggttggtcag atgttttctt tccgaccacg acgcactgg 420
 actgcccagg attgcaattg ttctatc 447

<210> 32
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 32
 Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
 1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
 20 25 30

Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val Thr Asn Asp Cys
 35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
 50 55 60

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp
 65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
 85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
 100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
 115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Ala Gln Asp
 130 135 140

Cys Asn Cys Ser Ile
 145

<210> 33
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 33
 gacgggatta attatgcaac aggggaatcctt ccgggttget ccttttctat ctctctcttg 60
 gcacttctct cgtgcctgac tgtccccgct tcggccatta actaccacaa cacctcgggc 120
 atctatcata tcaccaacga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
 atcttgcatc tcccagggttg cgtgccctgc gtgagagtgg ggaatcagtc gagttgctgg 240
 gtggccctta cccctaccat cgcagcgcca tacatcggcg caccgcttga gtccttgccg 300

agtcacgtgg atctgatggg gggggcggcc actgtctgtt cagcccttta catcggggat 360
 ttgtgtggcg gtgcgttctt gggtggtcag atgttctctt tccgaccacg gcgcactgg 420
 accaccaag attgcaactg ctccatc 447

<210> 34
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 34

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
 1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
 20 25 30

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
 35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
 50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Ser Cys Trp
 65 70 75 80

Val Ala Leu Thr Pro Thr Ile Ala Ala Pro Tyr Ile Gly Ala Pro Leu
 85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
 100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
 115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
 130 135 140

Cys Asn Cys Ser Ile
 145

<210> 35
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 35
gacgggatca attatgcaac agggaaatatt cccggttgct cyttttctat cttccttytg 60
gcacttctct cgtgtctgac tgtccccgct tcggccacta actatcgcaa cgtctcgggc 120
atctaccatg tcaccaatga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
atcttagcac ttccagggtg cgtgccctgc gtgagagtgg ggaaccagtc acgctgctgg 240
gtggccctta cccctaccgt cgcagcgcca tacaccgcgg cgcgcttga gtcctgcgg 300
agtcatgtgg atctgatggt gggagctgcc actgtttggt cagcccttta catcggggag 360
ttgtgtggcg gcttgttctt ggttggtcag atgttctctt tycagcctcg gcgccactgg 420
actaccagg attgcaattg ttccatc 447

<210> 36
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (120)..(120)
<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE
<222> (134)..(134)
<223> Xaa represents any amino acid

<400> 36

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser
1 5 10 15

Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 37
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 37
gacgggatta attatgcaac agggaaayctc cccgggttget ctttttttat cttcctcttg 60
gcactttctct cgtgcctgac tgtccccgct tcggccacca actaccgcaa tgtctcgggc 120
atttaccatg tcaccaatga ctgcccgaat tcaagcatag tgtttgaggc cgaccatcac 180
atcttgcacc ttccaggatg cgtgccctgc gtgaaagagg gaaatcattc acgctgctgg 240
gtggccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg 300
agtcatgtgg atgtgatggt gggggctgcc actgtttgtt cagcccttta catcggggat 360
ctgtgcggtg gcttgttctt ggttggtcag atgttctctt tccgaccacg gcgccactgg 420
actaccacagg aatgcaattg ttccatc 447

<210> 38
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa represents any amino acid

<400> 38

Asp Gly Ile Asn Tyr Ala Thr Gly Xaa Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Phe Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Lys Glu Gly Asn His Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Val Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu
130 135 140

Cys Asn Cys Ser Ile
145

<210> 39
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 39
gacgggatca attatgcaac agggaacctc cccggttgct ctttctctat cttcatcctg 60
gcacttctct cgtgcctgac tgtcccggcc tcggctcagc attatcggaa tgtctcgggc 120
atttaccacg tcaccaacga ctgcccgaac tccagcatag tgtatgagtc cgaccatcac 180
atcttacacc taccaggggtg tgtaccctgt gtgaagactg ggaacacttc gcgctgctgg 240
gtggccttaa cacctaccgt ggccgcgccc ataactttcgg ctccacttat gtccgtacgg 300
cggcatgtgg atctgatggt gggcgcagct accctatcgt ctgccctcta cgttgagagac 360
ctctgcgggg gtgccttctt agtggggcag atgttcacct tccagccgcg tcgccactgg 420
actgtccaag actgcaactg ttccatc 447

<210> 40
<211> 149
<212> PRT
<213> hepatitis C virus

<400> 40

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ser Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Lys Thr Gly Asn Thr Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Ile Leu Ser Ala Pro Leu
85 90 95

Met Ser Val Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu
100 105 110

Ser Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
115 120 125

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 41
<211> 957
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (383)..(383)
<223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (924)..(924)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (387)..(387)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (928)..(928)
 <223> n represents any nucleotide

<400> 41
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60
 gacgtcaagt tcccgggcgg cgccagatc gttggtggag tttacttggt gccgcgcagg 120
 ggccctcggt tgggtgtgcg cgcgacgaga aagacctcgg aacggtccca gcctagaggc 180
 aggcgccagc ccataccaaa ggtacgccag ccgacaggcc gtagctgggg tcaacccggc 240
 tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtcccc 300
 cgcgggtctc gtctaattg gggccccaac gacccccggc gaagggtccg caacttgggt 360
 aaggtcacg atacccttac atnccgncta gccgacctca tggggtacat ccctgtccta 420
 ggagggcgc ttggcggcgt tgcggctgcc ctggcgcatg gcgttagggc aatcgaggac 480
 ggggtcaatt acgcaacagg gaatcttctt ggttgctcct tttctatctt cctcttagca 540
 ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggatc 600
 taccatotta ccaatgactg ctgaacaac agcatcgttt ttgaggcgga gaccatgata 660
 ctgcatcttc caggttgtgt cccatgtatc aaggcgggga atgagtcacg atgttggtc 720
 cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgccga 780
 cacgtagacc tcctcgttgg ggcagcgga ttttggtcgg ccattgtacat cggagacctc 840
 tgtggtagca taatcttggg agggcagctt tttactttca ggcctaagta ccatcaggtt 900
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 42
<211> 319
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (128)..(129)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (308)..(308)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (310)..(310)
<223> Xaa represents any amino acid

<400> 42

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa
 115 120 125

Xaa Leu Ala Asp Leu Met Gly Tyr Ile Pro Val Leu Gly Gly Pro Leu
 130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ile
 180 185 190

Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu Thr Asn Asp Cys Ser
 195 200 205

Asn Asn Ser Ile Val Phe Glu Ala Glu Thr Met Ile Leu His Leu Pro
 210 215 220

Gly Cys Val Pro Cys Ile Lys Ala Gly Asn Glu Ser Arg Cys Trp Leu
 225 230 235 240

Pro Val Ser Pro Thr Leu Ala Val Pro Asn Ser Ser Val Pro Ile His
 245 250 255

Gly Phe Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys
 260 265 270

Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Ser Ile Ile Leu Val Gly
 275 280 285

Gln Leu Phe Thr Phe Arg Pro Lys Tyr His Gln Val Thr Gln Asp Cys
 290 295 300

Asn Cys Ser Xaa Asn Xaa Gly His Val Thr Gly His Arg Met Ala
 305 310 315

<210> 43
<211> 957
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (446)..(446)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (467)..(467)
<223> n represents any nucleotide

<220>
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<222> (470)..(470)
<223> n represents any nucleotide

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<222> (483)..(483)
<223> n represents any nucleotide

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<222> (500)..(500)
<223> n represents any nucleotide

<220>
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<222> (513)..(514)
<223> n represents any nucleotide

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<222> (520)..(520)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (531)..(531)

<223> n represents any nucleotide

<400> 43

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atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acaccatccg ccgcccacag      60
gacgtcaagt tcccgggtgg cggccagatc gttggtggag tctacttgct gccgcgcagg      120
ggcccgcgct tgggtgtgcg cgcgacgaga aagacttctg aacggtccca gccagagagt      180
aggcgccaac caatacccaa agtgcgccac caaacgggcc gtacctgggc ccagcccggg      240
tacccttggc ctctttatgg aaatgagggc tgtggttggg caggctggct cctgtccccc      300
cgcggctctc gcccaaattg gggcccaaac gacccccggc ggaggtcccg caacttgggt      360
aaagtcacgc acacccttac ttgcggcttc gccgacctca tggggtatat ccctgtcgta      420
ggcgtccgw tgggaggcgt cgcgngggcc ttggcgcatt gggtcanggn catcgaggac      480
gngttaaatt acgcaacagn gaatcttccc ggnngctctn tctctatctt nctcttggca      540
cttctctcgt gccttacaac accagcctcc gcggcgcatc ataccaacaa gtctggcctg      600
taccatctca ccaacgactg cccaacagc agcatcgttt atgaggcgga gacactgatt      660
ttgcacttgc ctgggtgtgt accttgtgtg aagrtgraca atcaatcccg gtgctgggtg      720
caggcctccc cgacctggc agtgcogaac gcgtctacgc cagtcaccgg gttccgcaaa      780
catgtggaca tcatggtggg cgetgccgcg ttctgttcag ctatgtatgt gggggacctg      840
tgccgggggc ttttctcgt tggacagctc ttcacgotca ggctcggat gcatcaggtt      900
gtccaggagt gtaactgttc catctacaca gggcatatca ctggacaccg aatggca      957
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<210> 44

<211> 319

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (144)..(144)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (149)..(149)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (156)..(157)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (161)..(161)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (167)..(167)
<223> Xaa represents any amino acid

<220>
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<222> (171)..(172)
<223> Xaa represents any amino acid

<220>
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<222> (174)..(174)
<223> Xaa represents any amino acid

<220>
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<222> (232)..(233)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (177)..(177)
<223> Xaa represents any amino acid

<400> 44

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Xaa
130 135 140

Gly Gly Val Ala Xaa Ala Leu Ala His Gly Val Xaa Xaa Ile Glu Asp
145 150 155 160

Xaa Val Asn Tyr Ala Thr Xaa Asn Leu Pro Xaa Xaa Ser Xaa Ser Ile
165 170 175

Xaa Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ala
180 185 190

His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Xaa Xaa Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Gln Ala Ser Pro Thr Leu Ala Val Pro Asn Ala Ser Thr Pro Val Thr
245 250 255

Gly Phe Arg Lys His Val Asp Ile Met Val Gly Ala Ala Ala Phe Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Leu Arg Pro Arg Met His Gln Val Val Gln Glu Cys
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 45
<211> 413
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (302)..(302)
<223> n represents nucleotide

<220>
<221> misc_feature
<222> (340)..(340)
<223> n represents nucleotide

<220>
<221> misc_feature
<222> (384)..(384)
<223> n represents nucleotide

<400> 45

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atgagcacac ttcctaaacc tcaaagaaaa accaaacgaa acaccaaccg tcgcccacag      60
gacgtcaagt tcccgggtgg cggtcagatc gttggtggag tttacttgtt gccgcgcagg      120
ggccctcggt tgggtgtgcg cgcgacgagg aaaacttctg aacgggtcca gcccaggggt      180
agacgccaac ctataccgaa ggtgcgtcac caaacggggc gtacctgggc tcaacccggg      240
taccctgggc ctctttatgg gaatgagggg tgtggctggg caggggtggc cctgtcccc      300
cncggctctc gcctaattg gggccctaata gacccccggn ggaggtcccg caacctgggt      360

aaggtcatcg atacccttac ttgnggsttc gccgacctca tagagtacat tcc              413

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<210> 46
<211> 137
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (101)..(101)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (114)..(114)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (128)..(129)
<223> Xaa represents any amino acid

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<400> 46

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Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1           5           10           15

```

```

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20           25           30

```

```

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala

```

35	40	45
Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro		
50	55	60
Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly		
65	70	75
		80
Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp		
	85	90
		95
Leu Leu Ser Pro Xaa Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro		
	100	105
		110
Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa		
	115	120
		125
Xaa Phe Ala Asp Leu Ile Glu Tyr Ile		
130	135	

<210> 47
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (324)..(324)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (340)..(340)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (455)..(455)
 <223> n represents any nucleotide

<400> 47
atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acacaaaccg tcgccaatg 60
gatgtcaagt tcccggggcgg cggtcagatc gttgggtggag tctacttggt accgcgcagg 120
ggccacggtt tgggtgtgcg cgcgacgagg aagacttcgg aacgggtcca ggccagaggt 180
aggcgccaac caatacccaa ggtgcgccag aaccaaggcc gaacctgggc tcagcctggg 240

taccctggc ccctttatgg gaacgagggc tgcggctggg cgggggtggc cttgtcccc 300
cgtggctctc gcccggaact gggncccaat gacccccgn ggaggtcccg caacctgggt 360
aaggtcatcg acacctcac ttgcggcttc gccgacctca tggagtacat ccctgtcgtt 420
ggcgcccccc ttggaggcgt tgcggcgga ctggnacatg gtgtcagggc catcgaggac 480
gggataaact atgcaacagg gaatcttctt ggttgcctt tctctatctt ccwcttggca 540
cttctctcgt gcctcaccac gcctgcctcc gcactaaact atgctaacia gtctgggctg 600
tatcatctaa ccaatgactg cccaatagc agcattgtgt atgaggcgaa tggcatgac 660
ctgcatctcc cgggttgctg cccctgcgtg aagaccggca acctgaccaa gtgttgctg 720
tcggcctccc cgacattggc ggtgcagaat gcgtcgggtg ccacagggg tgtccgcgag 780
cacgtggacc tcttggtggg tctgtctgctg ttctgtctctg ccacgtacgt gggcgactta 840
tgcggtgggc tctttctcgt tgggcagttg ttcacgttca gaccaggat gtatgagac 900
gccaggact gcaactgttc catctatgca ggccacatca ctgggcaccg gatggcg 957

<210> 48
<211> 319
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (108)..(108)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (114)..(114)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE

<222> (152)..(152)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (178)..(178)
<223> Xaa represents any amino acid

<400> 48

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Ala Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asp Trp Xaa Pro Asn Asp Pro
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Glu Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Ala Glu Leu Xaa His Gly Val Arg Ala Ile Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Xaa Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu
180 185 190

Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Leu Thr Lys Cys Trp Leu
225 230 235 240

Ser Ala Ser Pro Thr Leu Ala Val Gln Asn Ala Ser Val Ser Ile Arg
245 250 255

Gly Val Arg Glu His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 49
<211> 309
<212> DNA
<213> hepatitis C virus

<400> 49
atgagcacac ttccctaaacc acaaagaaaa accaaaagaa acaccaaccc cggccacagg 60
acgttaagtt cccaggcggc ggtcagatcg ttggtggagt ttacgtgcta ccacgcaggg 120
gccccagtt ggggtgtgcgt gcagtgcgca agacttccga gcgggtcgcaa cctcgcagta 180
ggcgccaacc catccccagg gcgcgcggaa ccgagggcag gtccctgggct cagcccggt 240

acccttggcc cctatatggg aatgagggct gcgggtgggc aggggtggctc ctgtccccgc 300
gcggctctc 309

<210> 50
<211> 115
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (17)..(17)
<223> Xaa represents any amino acid

<400> 50

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Xaa Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Gln Leu Gly Val Arg Ala
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Ser Arg Arg Gln Pro
50 55 60

Ile Pro Arg Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg
115

<210> 51
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 51
gacggaatta atttcgcaac agggaattta cctgggttget ctttctctat cttocttctg 60
gctttgttct catgcttgct tacacccaca gccgggctgg agtaccgtaa tgcctccgga 120
ctctacatgg taactaacga ctgcagtaac ggtagtatcg tgtatgaggc cggggatatt 180
atcctccact tacctggctg tgtccctgc gtacgctctg gcaatacatc aagatgctgg 240
atccctgtga gcccyaccgt cgcctgaag tcgccctgcg ccgccaccgc ctctctccgc 300
acgcacgtgg atatgatggg gggrgcggcc accctatgct cagctctcta cgtaggagac 360
ctttgtggag cgctatttct tgytyggcag gggttctcat ggagacatcg ccagcattgg 420
actgtccagg actgcaactg ttccatc 447

<210> 52
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (85)..(85)
<223> Xaa represents Pro

<220>
<221> MISC_FEATURE
<222> (108)..(108)
<223> Xaa represents Gly

<220>
<221> MISC_FEATURE
<222> (128)..(128)
<223> Xaa represents Val

<400> 52

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Leu Thr Pro Thr Ala Gly
20 25 30

Leu Glu Tyr Arg Asn Ala Ser Gly Leu Tyr Met Val Thr Asn Asp Cys
35 40 45

Ser Asn Gly Ser Ile Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Ser Gly Asn Thr Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Ser Xaa Thr Val Ala Val Lys Ser Pro Cys Ala Ala Thr
85 90 95

Ala Ser Leu Arg Thr His Val Asp Met Met Val Xaa Ala Ala Thr Leu
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ala Leu Phe Leu Xaa
115 120 125

Gly Gln Gly Phe Ser Trp Arg His Arg Gln His Trp Thr Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 53

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 53

ctcgacagtt actgagaatg acatccgtgt cgaggaatca atataccaat gttgtgactt 60

ggcccccgag gctcgcaagg ccataaagtc gctcaccgag cggctgtaca tcggggggccc 120

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yctaaccaat tcaaaaggac agaactgctg ctaccgtctg tgccgcgccca gcggcgtgct      180
gactaccagc tgcggcaaca ccctgacatg ctacttgaaa gccagagcgg cctgtcgagc      240
tgcaaagctc cgggaactgca ccatgctcgt gtgcgggggat gaccttgctg ttatctgtga      300
gagtgcggga gtcgaggaag acgcggcgaa cctacgagct      340

```

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<210> 54
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (40)..(40)
<223> Xaa represents any amino acid

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<400> 54

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Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
1           5           10           15

```

```

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20           25           30

```

```

Glu Arg Leu Tyr Ile Gly Gly Xaa Leu Thr Asn Ser Lys Gly Gln Asn
35           40           45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50           55           60

```

```

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
65           70           75           80

```

```

Ala Lys Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85           90           95

```

```

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
100          105          110

```

Ala

<210> 55
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 55
 ctcgacagtt actgagaacg acatccgtac cgaggratca atctatcaat gttgtgactt 60
 ggccccygag gcccgaagg ccataaagtc gtcaccgag cggctgtacg tcggggggccc 120
 cctaaccaat tcaaaggggc agaactgcgg ctatcgtcgg tgcgcgcta gcggcgtgct 180
 gaccaccagc tgcggcaaca cctcacatg ctacttgaaa gccagggcgg cctgtcgagc 240
 tgcaaagctc caggactgca cgatgctcgt gtgcggagac gaccttgctg ttatctgtga 300
 gagcgcggga gtcgaggagg acgcggcgaa cctacgagtc 340

<210> 56
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (12)..(12)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (22)..(22)
 <223> Xaa represents any amino acid

<400> 56
 Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Xaa Ser Ile Tyr Gln
 1 5 10 15
 Cys Cys Asp Leu Ala Xaa Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
 65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
 100 105 110

Val

<210> 57
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 57
 ctcgacagtt actgagaacg acattcgtgt cgaggaatca atctaccagt gctgtgactt 60
 ggcccccgag gcccgcaagg ccataaagtc gctcaccgag cggtgtata tcgggggtcc 120
 cctaaccaac tcaaaagggc agaactgcgg ctaccgtcgg tgccgcgccca gggcggtgct 180
 gactaccagc tgcggttaata ccctcacatg ttacttgaaa gccagggcgg cctgtcgagc 240
 tgcgaagctc caggactgca caatgctcgt gtgcggagac gaccttgtcg ttatctgtga 300
 gagtgcrgha gtcgaggagg atgcggcgaa cctacgagtc 340

<210> 58
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE

<222> (102)..(102)
<223> Xaa represents any amino acid

<400> 58

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Xaa Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
100 105 110

Val

<210> 59
<211> 652
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (524)..(524)
<223> n represents any nucleotide

<220>
<221> misc_feature

<222> (625)..(625)

<223> n represents any nucleotide

<400> 59

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cgtacagcct ccaggacccc ccctcccggg agagccatag tggctctcgg aaccggtgag      60
tacaccggaa ttgccaggac gaccgggtcc tttcttggaat caaccgctc aatgcctgga      120
gatttggggc tgcccccgca agactgctag ccgagtagtg ttgggtcgcg aaaggccttg      180
tggtagctgc tgataggggtg ctgctgagtg ccccgggagg tctcgtagac cgtgcaccat      240
gagcacgaat cctaaacctc aaagaaaaac caaaagaaac accaaccgcc gccacagga      300
cgtcaagttc ccgggcgggtg gccagatcgt tggtagagtc tacgtgctac cgcgcagggg      360
ccctagattg ggtgtgcgcg cagcgcggaa gacttcggag cggtcgcaac ctctggtggag      420
gcgccaacct attcccaagg agcgcgcacc cgagggcagg tcctgggcgc agcccggtta      480
cccctggccc ctctatggta acgagggctg cgggtgggca ggtnggctcc tgtcccctcg      540
cggctcccggt cctagttggg gtctactga ccccggcgt aggtcacgca atttgggtaa      600
ggtcacgat accctcacgt gttgnttcgc cgacctcatg ggtacatac cg                652
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<210> 60

<211> 138

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (96)..(96)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (129)..(129)

<223> Xaa represents any amino acid

<400> 60

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Ala Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Xaa
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Xaa Phe Ala Asp Leu Met Gly Tyr Ile Pro
 130 135

<210> 61
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 61
 ctcaacggtc actgaagctg atatccgaac agaggagtcc atataccaat gctgtgacct 60
 gcaccccgaa gcacgtgtag ccatcaagtc tttgactgaa aggctgtacg tcggggggcc 120
 cttgaccaat tcaaaagggg agaactgctg ctatcgaga tgccgtgcca gcggcgtctt 180
 gacaaccagc tgcggcaaca cctcacctg ctatatcaag gccctagcag cctgtagagc 240
 tgccaagctc caggactgca ccatgctcgt ctgtggcgac gacctggtcg tgatctgcga 300

gagtgtaggg acccaggagg atgcggcgag cctgcgagcc

340

<210> 62
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 62

Ser Thr Val Thr Glu Ala Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu His Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Glu Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Val Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg
100 105 110

Ala

<210> 63
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
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<222> (1)..(1)
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<220>
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<222> (311)..(311)
<223> n represents any nucleotide

<220>
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<222> (316)..(316)
<223> n represents any nucleotide

<220>
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<222> (330)..(340)
<223> n represents any nucleotide

<400> 63
ntcaacagtc actgagagtg atatccgtac agaggagtcc atctaccaat gctgtgatct 60
agaccccgag gctcgcaagg ccataaggtc cctcacagag aggcctttata tcgggggtcc 120
cctgacaaac tcaaaagggc agaactgcgg ctaccgcga tgccgtgcaa gcggcgctct 180
gacgactagc tgccgcaaca ccctcacctg ttacataaag gccagggcag cctgtcgagc 240
tgccaagctc caggattgct caatgctcgt ctgtggcgac gaccttgctg ttatctcgca 300
gatcgagggg ntccangagg atccgtcgan nnnnnnnnnn 340

<210> 64
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (104)..(105)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (110)..(113)
<223> Xaa represents any amino acid

<400> 64

Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Asp Pro Glu Ala Arg Lys Ala Ile Arg Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ile Glu Gly Xaa Xaa Glu Asp Pro Ser Xaa Xaa Xaa
100 105 110

Xaa

<210> 65
<211> 831
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (779)..(779)
<223> n represents any nucleotide

<400> 65

cgtagaccgt gcaccatgag cacgaatcct aaacctcaaa gaaaaaccaa acgtaacatc 60
 aaccgcgcgc cacaggacgt caagttcccg ggcgggtggcc agatcgtcgg tggagtttac 120
 ctgttgccgc gcaggggccc tagattgggt gtgcgcgcga ctaggaagac ttccgagcgg 180
 tcgcaacctc gtggggaggc acagcctatc cccaaggctc gccgatccga gggcaggctc 240
 tgggctcagc cggggtacct ttggccctc tatggcaatg agggcatggg ttgggcaggg 300
 ttgctcctgt ccccccattg ctcgggcct agttggggcc cttcagacct ccggcgtagg 360
 tcgcgtaatt tgggtaaggt catcgatacc ctcacatgcg gcttcgcga cctcatgggg 420
 tacattccgc tcgtcggcgc cccctaggg ggcgttgcca gggccctggc gcaaggcttc 480
 cgggatctac cagtcacca acgattgttc caatgggagc attgtgtatg aggcggaagg 540
 catgatcatg catctccccg ggtgcgtgcc ctgcgttcgg gaaggtaata tctctcgttg 600
 ctgggtaccg ttttccccca cgtcgcagc caggaaatgct agcgtcccca ctcaggcaat 660
 tcggcgacac gtgcacttgc ttgttggggc ggccacactc tgttctgcta tgtatgtggg 720
 ggacctctgt gggtcctgt tctcgtcgg ccaactgttc accttcacaw ccgccagna 780
 ctacacagtg caagactgca attgttccat ctaccccggc catataacgg g 831

<210> 66
 <211> 158
 <212> PRT
 <213> hepatitis C virus

<400> 66

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Ile Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly

65		70		75		80									
Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Glu	Gly	Met	Gly	Trp	Ala	Gly	Trp
				85					90					95	
Leu	Leu	Ser	Pro	His	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Ser	Asp	Pro
			100					105					110		
Arg	Arg	Arg	Ser	Arg	Asn	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys
			115				120					125			
Gly	Phe	Ala	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Leu	Val	Gly	Ala	Pro	Leu
	130					135					140				
Gly	Gly	Val	Ala	Arg	Ala	Leu	Ala	Gln	Gly	Phe	Arg	Asp	Leu		
145					150					155					

<210> 67
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
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 <222> (1)..(7)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (334)..(340)
 <223> n represents any nucleotide

<400> 67	
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ggcccccgag gctcgcgtag ccataaagtc gctcactgag cggctatatg tcggggggccc	120
tctcaccaac tcaaaaggac agaactgcgg ctatcgccgg tgccgtgcga gcggtgtgct	180
gactactagc tgcggtaaca cctcacatg ctacctgaaa gccgccgcgg cctgtcgagc	240
tgcaaagctc cgggaatgca caatgctcgt gtgtggcgac gacctcgtcg ttatctgtga	300

gagtgcgggg gtccaggagg atgctgcaag cctnnnnnnn

340

<210> 68
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
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<222> (1)..(2)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (111)..(113)
<223> Xaa represents any amino acid

<400> 68

Xaa Xaa Val Thr Glu Ser Asp Ile Arg Val Glu Xaa Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Arg Glu Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Xaa Xaa
 100 105 110

Xaa

<210> 69
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
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 <222> (28)..(28)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (336)..(340)
 <223> n represents any nucleotide

<400> 69
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 acccgagcag gccagaactg ccatacactc attgactgag agactctacg taggagggcc 120
 catgatgaac agcaaagggc aatcctgcgg atacaggcat tgccgcgccca ggggagtgct 180
 caccaccagt atggggaata ccatacactg ctacatcaag gccctagcgg cttgttaaagc 240
 agcaggaata gtggccccc ccatgctggt gtgcggcgat gacctagttg tcctctcaga 300
 gagtcaggga gtcgaggagg acgaccggaa cctgannnnn 340

<210> 70
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (9)..(9)
 <223> Xaa represents any amino acid

<220>
<221> MISC FEATURE
<222> (112)..(113)
<223> Xaa represents any amino acid

<400> 70

Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg His Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Val Glu Glu Asp Asp Arg Asn Leu Xaa
100 105 110

Xaa

<210> 71
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 71

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acctgagcag gcccggaactg ccatacattc attaaactgag agactttacg tgggagggcc    120
catgatgaac agcaaagggc agtcctgcgg atacaggcgt tgccgcgcta gcggagtgt      180
caccaccagt atggggaaca ccatacagtg ttatgtgaaa gccctgcag cttgtaaagc      240
tgccggcatt gttgccccca cgatgctggg gtgcggcgat gacctggttg tcatctcaga    300
gagtcagggg gctgaggagg acgagcgaaa cctgagagtc                          340

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<210> 72
<211> 113
<212> PRT
<213> hepatitis C virus

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<400> 72

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Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1           5           10           15

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Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
          20           25           30

```

```

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
          35           40           45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
          50           55           60

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Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65           70           75           80

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Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
          85           90           95

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Val Ile Ser Glu Ser Gln Gly Ala Glu Glu Asp Glu Arg Asn Leu Arg
          100          105          110

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Val

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<210> 73
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 73
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 acccgagcaa gcccgaaactg ccatacatte attgactgag agactttacg taggaggggc 120
 catgatgaac agcaaggagc agtcctgcgg ttacagacgt tgccgcgcca gcggagtgtt 180
 caccaccagc atggggaata ccatcacatg ctatgtgaag gcattagctg cctgcaaagc 240
 tgcaggcatc gttgctccca cgatgctggt ttgtggcgac gatctggtca tcatctcaga 300
 gagtcaggga accgaggagg atgagcgga cctgagagtc 340

<210> 74
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 74
 Ser Thr Val Ala Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
 1 5 10 15
 Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
 20 25 30
 Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
 35 40 45
 Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
 50 55 60
 Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
 65 70 75 80
 Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Ile Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Val

<210> 75
<211> 1195
<212> DNA
<213> hepatitis C virus

<220>
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<223> n represents any nucleotide

<220>
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<222> (7)..(7)
<223> n represents any nucleotide

<220>
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<222> (352)..(352)
<223> n represents any nucleotide

<220>
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<222> (361)..(361)
<223> n represents any nucleotide

<220>
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<222> (369)..(369)
<223> n represents any nucleotide

<220>
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<222> (371)..(371)
<223> n represents any nucleotide

<220>

<221> misc_feature
<222> (374)..(374)
<223> n represents any nucleotide

<220>
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<222> (387)..(387)
<223> n represents any nucleotide

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<222> (395)..(395)
<223> n represents any nucleotide

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<222> (446)..(446)
<223> n represents any nucleotide

<220>
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<223> n represents any nucleotide

<220>
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<223> n represents any nucleotide

<220>
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<223> n represents any nucleotide

<220>
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<222> (887)..(887)
<223> n represents any nucleotide

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<222> (887)..(888)
<223> n represents any nucleotide

<220>
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<222> (890)..(891)
<223> n represents any nucleotide

<220>
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<222> (978)..(978)
<223> n represents any nucleotide

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<222> (1194)..(1194)
<223> n represents any nucleotide

<220>
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<222> (673)..(673)
<223> n represents any nucleotide

<400> 75
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tacaccggaa ttgccgggaa gactgggtcc ttctttggat aaaccactc tatgcccggc 120
catttgggag tgcccccgca agactgctar ccgagtagcg ttgggttgag aaaggccttg 180
tggtagtgcc tgataggggtg cttgcgagtg ccccgaggagg tctcgtagac cgtgcacat 240
gagcacaat cctaaacctc aaagaaaaac caaaagaaac actaaccgcc gccacagga 300
cgttaagtgc ccgggcgggtg gccagatcgt tggcggagta tacttggtgc cntgcagggg 360
nccaggtng ngtnatgag caacgangaa gactnccgaa cagtccagc cacgtgggag 420
gcgccagccc atcccgaaag atcgngcac cactggcaag tccctggggac gtccaggata 480
tcctggccc ctgtatggga acgagggcct cgggtgggca ggggtggctcc tgtccccccg 540
gggtcccgcc cgtcatggg gccccacgga ccccggcac aggtcgcgca acttgggtaa 600

gggtcatcgat accctcacgt ncggttttnc cgacctcatg gggtagattc ccgtcgttgg 660
 cgccccagta gngggcgctg ccagagctct cgcgcattggc gtgagagtcc tggaggacgg 720
 gataaactat gaaacaggga acctccccgg ttgtcttttc tctatctccc tccttgcctc 780
 tctgtcctga attaccngc cagtttctgc tgtggaaatc aaaaacacca gmaacacata 840
 catggtgact aacgactggt caaacagyag catcacctgg cagctttnngn ncgcggtgct 900
 tcacgttctt ggatgcgtcc cctgtgaacg agagggcaac agttccccgt gctggattcc 960
 agtcacgccc racgtakncg tgagccgacc tgggtgcccta accgaggggt tgcgatcgca 1020
 catcgacacc atcgtagcgt ccgcaacatt ttgttctgcc ctctacatag gggatgtatg 1080
 tggcgcgata atgatatgctg cccaagtggc catcgtctcg ccggagcatc atcactttgt 1140
 ccaggactgt aactgttcca tctaccggg ccacataacg gggcctcgta tgtng 1195

<210> 76
 <211> 318
 <212> PRT
 <213> hepatitis C virus

<220>
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 <222> (38)..(38)
 <223> Xaa represents any amino acid

<220>
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 <222> (41)..(41)
 <223> Xaa represents any amino acid

<220>
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 <222> (44)..(44)
 <223> Xaa represents any amino acid

<220>
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 <222> (44)..(46)
 <223> Xaa represents any amino acid

<220>
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<222> (50)..(50)
<223> Xaa represents any amino acid

<220>
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<222> (53)..(53)
<223> Xaa represents any amino acid

<220>
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<222> (70)..(70)
<223> Xaa represents any amino acid

<220>
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<222> (128)..(128)
<223> Xaa represents any amino acid

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<223> Xaa represents any amino acid

<220>
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<222> (145)..(145)
<223> Xaa represents any amino acid

<220>
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<222> (186)..(186)
<223> Xaa represents any amino acid

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<223> Xaa represents any amino acid

<220>
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<223> Xaa represents any amino acid

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<221> MISC_FEATURE

<222> (216)..(217)

<223> Xaa represents any amino acid

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<221> MISC_FEATURE

<222> (244)..(244)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (246)..(246)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (318)..(318)

<223> Xaa represents any amino acid

<400> 76

Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Asn
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly	Val	Tyr	Leu	Leu	Xaa	Cys	Arg	Xaa	Pro	Arg	Xaa	Xaa	Xaa	Cys	Ala
		35					40					45			

Thr	Xaa	Lys	Thr	Xaa	Glu	Gln	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
	50					55					60				

Ile	Pro	Lys	Asp	Arg	Xaa	Thr	Thr	Gly	Lys	Ser	Trp	Gly	Arg	Pro	Gly
65					70					75					80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa
115 120 125

Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Xaa Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Glu Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Ser Leu Leu Ala Leu Leu Ser Ile Thr Xaa Pro Val Ser Ala Val Glu
180 185 190

Ile Lys Asn Thr Xaa Asn Thr Tyr Met Val Thr Asn Asp Cys Ser Asn
195 200 205

Xaa Ser Ile Thr Trp Gln Leu Xaa Xaa Ala Val Leu His Val Pro Gly
210 215 220

Cys Val Pro Cys Glu Arg Glu Gly Asn Ser Ser Arg Cys Trp Ile Pro
225 230 235 240

Val Thr Pro Xaa Val Xaa Val Ser Arg Pro Gly Ala Leu Thr Glu Gly
245 250 255

Leu Arg Ser His Ile Asp Thr Ile Val Ala Ser Ala Thr Phe Cys Ser
260 265 270

Ala Leu Tyr Ile Gly Asp Val Cys Gly Ala Ile Met Ile Ala Ala Gln
275 280 285

Val Val Ile Val Ser Pro Glu His His His Phe Val Gln Asp Cys Asn
290 295 300



—

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Arg Asp Glu Asn Asn Leu Arg
100 105 110

Pro

<210> 79
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 79
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gcccgaggag gcccggactg tcatacatte gctcactgag agactctaca taggcggggcc 120
gatgatgaac agcaaaggcc agtcctgtgg atacaggcgt tgtcgcgcca gcggggtggt 180
caccactagc atgggcaata ccatcacgtg ctatgtgaaa gccatggcag cttgcagagc 240
tgccgggatt gacgccccca caatgttggt atgtggcgac gacctggtgg tcatctcaga 300
gagtcagggg accgaggagg acgagcgaaa tctgagagtc 340

<210> 80
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 80

Ser Thr Val Thr Glu Arg Asp Ile Arg Asn Glu Glu Ser Ile Phe Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Glu Ala Arg Thr Val Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Met Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Ile Asp Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Val

<210> 81
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 81
ctcttgactc tactgtcact gaacaggata tcagggtaga agaagaaata taccaatgtt 60
gtgaccttga gccggaggct agacgggcaa tcaaatacgt caccggaacgg ctttacgttg 120
gagggtcccat gttcaacagc aaggggctca aatgcggata tcgccgttgc cgtgctagcg 180
gtgtattgcc cactagctac ggtaatacaa tcacctgcta catcaaggcc agagcggctg 240
ctcgagctgc gggccttcaa gacccatcat tccttgctctg cggagatgat ttggtggtag 300
tggctgagag ttgcgkcggt gatgaggagg atagggcagc 340

<210> 82
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (103)..(103)
<223> Xaa represents any amino acid

<400> 82

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Leu Lys
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Tyr
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Arg Ala Ala Arg Ala
65 70 75 80

Ala Gly Leu Gln Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Val Ala Glu Ser Cys Xaa Val Asp Glu Glu Asp Arg Ala Ala Leu
100 105 110

Arg

<210> 83

<211> 340

<212> DNA

<213> hepatitis C virus

<220>

<221> misc_feature

<222> (336)..(336)

<223> n represents any nucleotide

<400> 83

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60

ggagcccgaa gctcgcaagg ttattaccgc cctcacagaa agactctacg tgggcggccc 120
 catgcacaac agcaagggag acctttgtgg gtatcggaga tgccgcgcaa gcggcgtcta 180
 caccgaccgc ttcggaacaa cactgacgtg ctacctcaaa gcctcagctg ctattagagc 240
 ggcagggctg agagactgca ccatgctggg ttgcggtgac gacttggtcg tcacgctga 300
 gagcgatggc gtagaggagg ataaccgagc cctccnagcc 340

<210> 84
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (112)..(112)
 <223> Xaa represents any amino acid

<220>
 <221> misc_feature
 <223> Xaa represents any amino acid

<400> 84

Ser Thr Val Thr Glu Lys Asp Ile Arg Pro Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Asn Arg Ala Leu Xaa
100 105 110

Ala

<210> 85
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 85
ctccacggtg actgaaaagg acatcagggt cgaggaagag atctatcaat gttgtgacct 60
ggarcccgaa gcccgcaaag caatatccgc cctcacagag agctctact tgggcggccc 120
catgtataac agcaaagggg agctctgcgg gtatcggagg tgccgcgcga gccggagtga 180
caccacaagt ttcggaaca cagtgcctg ctatcttaag gccaccgcag ctaccagggc 240
tgcaggccta aaagactgca ccatgctggg ctgcgggtgac gacttggtcg tcatcgccga 300
gagcgagggc gtagaggagg attcccaacc cctccgagcc 340

<210> 86
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
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<222> (21)..(21)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (34)..(34)
<223> Xaa represents any amino acid

<400> 86

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Xaa Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
 20 25 30

Glu Xaa Leu Tyr Leu Gly Gly Pro Met Tyr Asn Ser Lys Gly Glu Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Glu Gly Val Glu Glu Asp Ser Gln Pro Leu Arg
 100 105 110

Ala

<210> 87
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 87
 ctccaccgta accgaaagg acatcagggt cgaggaggag gtctatcagt gttgtgatct 60
 ggagccagag gcccgcaagg caatatccgc cctcacggag agactctatg tgggcgggtcc 120
 catgtttaac agcaaggagg acctatgtgg ctaccgcagg tgccgcgcaa gcggcgtcta 180
 caccaccagc ttcggaaca cactgacctg ctacctcaag gccacggccg ctaccagagc 240
 ggccggcctg aaggattgca caatgctggg ttgcggggac gacctggtcg tcatcgcaga 300
 gagcgtatggc gtggacgagg accgcccagc cctccaagct 340

<210> 88
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 88

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Asp Glu Asp Arg Arg Ala Leu Gln
100 105 110

Ala

<210> 89
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (111)..(111)
<223> n represents any nucleotide

<220>
<221> misc_feature

<222> (126)..(126)
<223> n represents any nucleotide

<400> 89
ctcaacagtc acagagcgcg atgtccagac ggagcatgac atctaccagt gctgtaagtt 60
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catgtntaac tctaaaggtc aggcattgtg ataccgtagg tgcagggcca gtggcgtctt 180
gaccaccatc ctggccaata ctctgacttg ctacttgaaa gctcaggcgg catgcagagc 240
tgccgggctg aaggactttg acatgttggg ctgcggagac gacdtgtcg ttatttcgga 300
gagtttgggg gtctcggagg acactagtgc actgcgagct 340

<210> 90
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (37)..(37)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (42)..(42)
<223> Xaa represents any amino acid

<400> 90
Ser Thr Val Thr Glu Arg Asp Val Gln Thr Glu His Asp Ile Tyr Gln
1 5 10 15
Cys Cys Lys Leu Glu Pro Ala Ala Arg Thr Ala Ile Thr Ser Leu Thr
20 25 30
Asp Arg Leu Tyr Xaa Gly Gly Pro Met Xaa Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ile Leu
50 55 60

Ala Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Leu Gly Val Ser Glu Asp Thr Ser Ala Leu Arg
100 105 110

Ala

<210> 91
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 91
ctcgacagtc accgagcgcg acatccrcac cgagcacgac atctaccaat gctgccaaact 60
tgacccggtg gcacgcaagg ctattacatc tctgactgag cggctgtact gcggwggggcc 120
catgatgaac tcccgtggtc aatcatgtgg ataccgtagg tgccgagcca gtggcgtgct 180
caccacgagc ttgggcaata ccctaacatg ctatttgaaa gcacaagcag cgtgtagggc 240
agcaaagctc aaaaactatg acatgttagt ctgcggagac gatctagtcg ttatcgcgga 300
gagtggagga gtctctgagg atgttgacgc cctgcgagca 340

<210> 92
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (38)..(38)
 <223> Xaa represents any amino acid

<400> 92

Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu His Asp Ile Tyr Gln
 1 5 10 15

Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Cys Xaa Gly Pro Met Met Asn Ser Arg Gly Gln Ser
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Leu
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
 65 70 75 80

Ala Lys Leu Lys Asn Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Ser Glu Asp Val Asp Ala Leu Arg
 100 105 110

Ala

<210> 93
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 93
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agatccggta gcacggaaaag ccattacatc tottactgag cggtgtact gcggcggccc 120
 catgtacaac tctcgaggtc agtcatgtgg gtaccgcagg tgccgggcta gtggtgtctt 180
 caccacaagc ttgggcaaca ccatgacatg ctacctgaag gctcaggcgg cttgtagggc 240
 agcraagctc aaaaactttg acatgttggc ctgcggagac gacctagtcg ttattgctga 300
 gagcggagga gtccctgagg atgccggggc cctgcgagtc 340

<210> 94
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC FEATURE
 <222> (81)..(81)
 <223> Xaa represents any amino acid

<400> 94

Ser Ser Val Thr Glu Arg Asp Ile Arg Thr Glu His Asp Ile Tyr Gln
 1 5 10 15

Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Arg Gly Gln Ser
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
 65 70 75 80

Xaa Lys Leu Lys Asn Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Pro Glu Asp Ala Gly Ala Leu Arg
 100 105 110

Val

<210> 95
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (36)..(36)
<223> n represents any nucleotide

<400> 95
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tatgtacaac tcaaagggcc aactctgtgg tcaacgccga tgccgagcaa gcggagtact 180
ccccacaagc atgggtaaca ccatacatg ctccctgaag gcaaccgccg cttgccgagc 240
agccggcttt acagattatg acatgttggt ctgcggagac gatttggttg tcgtaactga 300
gagtgcctga gtcaacgagg atatcgctaa cctgcgagcc 340

<210> 96
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa represents any amino acid

<400> 96

Ser Thr Val Thr Gly Arg Asp Ile Arg Thr Glu Xaa Asp Ile Tyr Leu
1 5 10 15

Ser Cys Gln Leu Asp Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr

20

25

30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Leu
 35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Phe Leu Lys Ala Thr Ala Ala Cys Arg Ala
 65 70 75 80

Ala Gly Phe Thr Asp Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Val Thr Glu Ser Ala Gly Val Asn Glu Asp Ile Ala Asn Leu Arg
 100 105 110

Ala

<210> 97
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 97
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 caaggacgag gctaggaggg tgataacttc actcacggag cggttttact gtggtgggtcc 120
 tatgttcaac agcaagggac aacactgcgg ttaccgccgc tgccgtgcta gtgggggtgct 180
 acccaccagc ttcgggaaca caatcacctg ttacatcaaa gcaaaggcag ctaccaaagc 240
 tgccggaatt aaaaatccat cattccttgt ctgcggagat gacttggtcg tgattgctga 300
 gagtgcaggg atcgatgagg acaagagcgc cttgagagct 340

<210> 98
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 98

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Leu Ser Ile Phe Gln
1 5 10 15

Ala Cys Asp Leu Lys Asp Glu Ala Arg Arg Val Ile Thr Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Gln His
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Thr Lys Ala
65 70 75 80

Ala Gly Ile Lys Asn Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ala Gly Ile Asp Glu Asp Lys Ser Ala Leu Arg
100 105 110

Ala

<210> 99

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 99

ctctaccgtc acagagaggg acatacggac agaagaatcc atctatctgt cttgtcaatt 60
gctgaagag gcccggaag ccattaaatc gctgacagag agactatacg tgggcggccc 120
gatggaaaac agcaagggcc aggccttgccg atataggcgt tgccgcgcaa gcggggtatt 180
caccacaagc ttggggaaca ccatgacttg ttacatcaaa gctaaagcgg cttgtaaagc 240
cgctggcatt gtagacccgg tgatgctcgt gtgcggtgac gacctagtgg tcatctcaga 300
aagcaagggg gtggaggagg accagcggga cctacgagtc 340

<210> 100
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 100

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
 1 5 10 15

Ser Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala
 65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg
 100 105 110

Val

<210> 101
 <211> 335
 <212> DNA
 <213> hepatitis C virus

<400> 101

ctccactgtc actgagagag acatacggac agaagaatcc atctayytgg cttgtcaatt 60

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gccggaagag gccggaagg ccattaaatc actgacagag agactatacg tgggcggccc      120
gatggaaaac agcaaaggcc aggcctgcgg atataggcgt tgccgcgcaa gcgggggtatt    180
caccacaagc ttggggaaca ccatgacttg ttacatcaag gccaaargcag cttgtaaagc    240
ygctggcatt gttgacccgg tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga    300
gagcaagggg gtagaggagg accagcgaga cctac                                335

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<210> 102
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (15)..(16)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (75)..(75)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (80)..(80)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (112)..(113)
<223> Xaa represents any amino acid

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<400> 102

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Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Xaa Xaa
1           5           10          15

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Ala Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20           25           30

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Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Xaa Ala Ala Cys Lys Xaa
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Xaa
100 105 110

Xaa

<210> 103
<211> 461
<212> DNA
<213> hepatitis C virus

<400> 103
cgtacagcct ccaggacccc ccctcccggg agagccatag tggctctgcgg aaccggtgag 60
tacaccggaa ttgccgggaa gactgggtcc tttcttgat taaccactc tatgccogga 120
gatttgggcg tgccccgcga agactgctag ccgagtagcg ttgggttgcg aaaggccttg 180
tggtagtgcc tgataggggtg cttgcgagtg ccccgaggag tctcgtagac cgtgcacat 240
gagcacgaat cctaaacctc aaagacaaac caaaagaaac accaaccgcc gccacagga 300
cgttaagtgc ccgggcgggtg gccagatcgt tggcgggggtg tacttggtgc cgcgcagggg 360
cccagagtg ggtgtgcgcg cgacgagaaa gacctcggag cgggtcccagc cgcgtgggag 420
gcgccaacct atccccagg ttaggcgcac caccggccgt t 461

<210> 104
<211> 74
<212> PRT

<213> hepatitis C virus

<400> 104

Met Ser Thr Asn Pro Lys Pro Gln Arg Gln Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Val Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Arg Thr Thr Gly Arg
65 70

<210> 105

<211> 340

<212> DNA

<213> hepatitis C virus

<220>

<221> misc_feature

<222> (338)..(338)

<223> n represents any nucleotide

<400> 105

ctctactgtc acagagaggg atatacgaac agaggaatcc atytatctgg cttgtcaatt 60

gcccgaagag gcccggaagg ccatcaaata actgacagag agactatacg tgggcggccc 120

gatggaaaac agcaagggcc aggcctgcgg atacaggcgt tgccgcgcaa gcggggtatt 180

caccacaagc ttggggaaca ccatgacttg ttacatcaaa gccaaaggcg cttgttaaagc 240

cgctggcatt gttgaccag tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga 300

aagcaagggg gtggaggagg accaacgaga cctacgantic 340

<210> 106
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (113)..(113)
<223> Xaa represents any amino acid

<400> 106

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Xaa Tyr Leu
1 5 10 15

Ala Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg
100 105 110

Xaa

<210> 107
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 107

Ala Arg Gln Ser Asp Gly Arg Ser Trp Ala Gln
1 5 10

<210> 108
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 108

Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 109
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 109

Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 110
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 110

Ala Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 111
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 111

Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg
1 5 10

<210> 112
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 112

Asp Arg Arg Ala Thr Gly Arg Ser Trp Gly Arg
1 5 10

<210> 113
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 113

Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg
1 5 10

<210> 114
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 114

Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln
1 5 10

<210> 115

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 115

Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln
1 5 10

<210> 116

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 116

Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln
1 5 10

<210> 117

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 117

Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 118

<211> 11

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (8)..(11)

<223> Xaa represents any amino acid

<400> 118

Val Arg Arg Thr Thr Gly Arg Xaa Xaa Xaa Xaa
1 5 10

<210> 119

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 119

Val Arg Arg Thr Thr Gly Arg Thr Trp Ala Gln
1 5 10

<210> 120

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 120

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val
1 5 10

<210> 121

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 121

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu
1 5 10

<210> 122

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 122

Tyr Glu Val His Ser Thr Thr Asp Gly Tyr His Val
1 5 10

<210> 123

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 123

Val Glu Val Lys Asn Thr Ser Gln Ala Tyr Met Ala
1 5 10

<210> 124

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 124

Ile Gln Val Lys Asn Asn Ser His Phe Tyr Met Ala
1 5 10

<210> 125

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 125

Val	Gln	Val	Lys	Asn	Thr	Ser	Thr	Met	Tyr	Met	Ala
1				5					10		

<210> 126

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 126

Val	Gln	Val	Lys	Asn	Thr	Ser	His	Ser	Tyr	Met	Val
1				5					10		

<210> 127

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 127

Val	Gln	Val	Ala	Asn	Arg	Ser	Gly	Ser	Tyr	Met	Val
1				5					10		

<210> 128

<211> 12

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (7)..(7)

<223> Xaa represents any amino acid

<400> 128

Val Glu Ile Lys Asn Thr Xaa Asn Thr Tyr Val Leu
1 5 10

<210> 129
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 129

Val Glu Ile Lys Asn Thr Ser Asn Thr Tyr Val Leu
1 5 10

<210> 130
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 130

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val
1 5 10

<210> 131
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 131

Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val
1 5 10

<210> 132
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 132

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile
1 5 10

<210> 133

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 133

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val
1 5 10

<210> 134

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 134

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val
1 5 10

<210> 135

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 135

Ile Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu
1 5 10

<210> 136

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 136

Ala His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu
1 5 10

<210> 137

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 137

Leu Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu
1 5 10

<210> 138

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 138

Leu Glu Tyr Arg Asn Ala Ser Gly Leu Tyr Met Val
1 5 10

<210> 139

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 139

Ile Tyr Glu Met Asp Gly Met Ile Met His Tyr
1 5 10

<210> 140
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 140

Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala
1 5 10

<210> 141
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 141

Val Tyr Glu Ala Lys Asp Ile Ile Leu His Thr
1 5 10

<210> 142
<211> 11
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (5)..(5)
<223> Xaa represents any amino acid

<400> 142

Val Trp Gln Leu Xaa Asp Ala Val Leu His Val
1 5 10

<210> 143
<211> 11
<212> PRT

<213> hepatitis C virus

<400> 143

Val Trp Gln Leu Arg Asp Ala Val Leu His Val
1 5 10

<210> 144

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 144

Ile Trp Gln Met Gln Gly Ala Val Leu His Val
1 5 10

<210> 145

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 145

Val Trp Gln Leu Lys Asp Ala Val Leu His Val
1 5 10

<210> 146

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 146

Val Trp Gln Leu Glu Glu Ala Val Leu His Val
1 5 10

<210> 147
<211> 11
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (5)..(6)
<223> Xaa represents any amino acid

<400> 147

Thr Trp Gln Leu Xaa Xaa Ala Val Leu His Val
1 5 10

<210> 148
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 148

Val Tyr Glu Ala Asp His His Ile Leu His Leu
1 5 10

<210> 149
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Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
1 5 10

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<400> 150

Val Phe Glu Ala Asp His His Ile Leu His Leu
1 5 10

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<400> 151

Val Tyr Glu Ser Asp His His Ile Leu His Leu
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<400> 152

Val Phe Glu Glu Thr Met Ile Leu His Leu
1 5 10

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Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu
1 5 10

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<211> 11

<212> PRT

<213> hepatitis C virus

<400> 154

Val	Tyr	Glu	Ala	Asn	Gly	Met	Ile	Leu	His	Leu
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<211> 11

<212> PRT

<213> hepatitis C virus

<400> 155

Val	Tyr	Glu	Ala	Gly	Asp	Ile	Ile	Leu	His	Leu
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<210> 156

<211> 13

<212> PRT

<213> hepatitis C virus

<400> 156

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<211> 13

<212> PRT

<213> hepatitis C virus

<400> 157

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<400> 158

Ile Arg Glu Gly Asn Ile Ser Arg Cys Trp Val Leu Pro
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Glu Asn Ser Ser Gly Arg Phe His Cys Trp Ile Pro Ile
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Glu Arg Ser Gly Asn Arg Thr Phe Cys Trp Thr Ala Val
1 5 10

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<400> 161

Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp Ile Pro Val
1 5 10

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<400> 162

Glu Arg His Gln Asn Gln Ser Arg Cys Trp Ile Pro Val
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<400> 163

Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp Ile Pro Val
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<400> 164

Glu Arg Glu Gly Asn Ser Ser Arg Cys Trp Ile Pro Val
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<400> 174

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Val Lys Asn Ala Ser Val Pro Thr Ala Ala
1 5 10

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Val Lys Asp Ala Asn Val Pro Thr Ala Ala
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Ala Arg Ile Ala Asn Ala Pro Ile Asp Glu
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Val Ser Lys Pro Gly Ala Leu Thr Lys Gly
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<400> 179

Val Ser Arg Pro Gly Ala Leu Thr Arg Gly
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<213> hepatitis C virus

<400> 182

Val	Ser	Gln	Pro	Gly	Ala	Leu	Thr	Lys	Gly
1				5					10

<210> 183

<211> 10

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<213> hepatitis C virus

<400> 183

Val	Ser	Arg	Pro	Gly	Ala	Leu	Thr	Glu	Gly
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<400> 184

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<210> 185
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<400> 185

Ala Pro Tyr Thr Ala Ala Pro Leu Glu Ser
1 5 10

<210> 186
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<400> 186

Ala Pro Ile Leu Ser Ala Pro Leu Met Ser
1 5 10

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<400> 187

Val Pro Asn Ser Ser Val Pro Ile His Gly
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Val Pro Asn Ala Ser Thr Pro Val Thr Gly
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Val Gln Asn Ala Ser Val Ser Ile Arg Gly
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<400> 190

Val Lys Ser Pro Cys Ala Ala Thr Ala Ser
1 5 10

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<400> 191

Ser Pro Arg Met His His Thr Thr Gln Glu
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<400> 192

Ser Pro Arg Leu Tyr His Thr Thr Gln Glu
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<400> 193

Thr Ser Arg Arg His Trp Thr Val Gln Asp
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<400> 194

Ala Pro Lys Arg His Tyr Phe Val Gln Glu
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<400> 195

Ser Pro Gln Tyr His Thr Phe Val Gln Glu
1 5 10

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<213> hepatitis C virus

<400> 196

Ser Pro Gln His His Asn Phe Ser Gln Asp
1 5 10

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<400> 197

Ser Pro Gln His His Ile Phe Val Gln Asp
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<400> 198

Ser Pro Glu His His His Phe Val Gln Asp
1 5 10

<210> 199

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<212> PRT

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<212> PRT

<213> hepatitis C virus

<400> 202

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1				5					10

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<400> 203

Gln Pro Arg Arg His Trp Thr Val Gln Asp
1 5 10

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<400> 204

Arg Pro Lys Tyr His Gln Val Thr Gln Asp
1 5 10

<210> 205
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<400> 205

Arg Pro Arg Met His Gln Val Val Gln Glu
1 5 10

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<400> 206

Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp
1 5 10

<210> 207
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<400> 207

Arg His Arg Gln His Trp Thr Val Gln Asp
 1 5 10

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<400> 208

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gcgatgacct ctacggtggc caccagggat ggcaaaactcc ccgcgacgca gcttcgacgt	780
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<400> 209
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<212> DNA
<213> hepatitis C virus

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ggccccagag tgggtgtgcg cgcgacgagg aagacttccg agcggtcgca acctcgcggg	180
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 <213> hepatitis C virus

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ggccccaggt tgggtgtgcg cgcgacaagg aagacttcgg agcggctcca gccacgtgga	180
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tacccttggc ccctatacgg gaatgaggga ctcggtggg caggatggct cctgtcccc	300
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tacatgggtga ccaacgactg caccaatgat agcattacct ggcaactcca ggctgctgtc	660
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<400> 214

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aggcgcacgc ccatcccaa agatcggcgc cccactggca agtcctgggg aaaaccagga	240
tacccttggc cctgtacgg gaatgagggc ctcggtggg cagggtggt cctgtcccc	300
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ccagtgcacac ctacagtggc agtcaggtag gtccggagcaa ctactgcttc gatacgcagt	780
catgtggacc tattagtagg cgcggccacg atgtgctctg cgctctacgt gggtgatatg	840
tgtggggctg tctttctcgt gggacaagcc ttcacgttca gacctcgacg ccatcaaacg	900
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<210> 216
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 216	
atgagcacac ttctaaacc tcaaagacaa accaaaagaa acacactccg tcgcccacag	60
aacgttaagt tcccgggcgg cggacagatc gttggtggag tatatgtgct gccgcgtagg	120
ggcccacgat tgggtgtgcg cgcagtagct aagacttccg agcggtcgca gcctcgcaaa	180
cagcgtcacc ttatcccaa ggctcgctcg cgcgagggcc ggtcctgggc tcagcccggg	240
tacccttggc cctctacgg gaataagggc tgtgggttgg caggatggct cttgtccccc	300
cgtggttctc gccctagttag gggcccaaat gacccccggc gtagatcccg caactttggt	360
aaggatcatg ataccctaac gtgtggattc gccgacctca tggggtacat tccgctcgtc	420
ggcgccctcg tggggggcgt cgcaagagcc ctcgctcatg gtgtgagggc acttggggac	480
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tatgtgctta ccaacgactg ctctaattgg agcattgtgt acgaggccga agatgtgac	660
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acggctctcaa cgacgggtggc cgttaggacc cttggcggtga ccaccgctc gatccgaacc	780
catgtggata tgctggtagg cgcaacgaaa ctgtgttcgg cgctgtacgt cggggacgct	840

ttcggggctg tgtttcttgt gggacaagcg ttcaccttca gacctcgccg ccacacgacc	900
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<210> 217
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 217	
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ggccctctat tgggtgtgcg cgctacacgt aagacttccg agcggtcaca gcctcgcgcg	180
cggcggcagc ctatcccca ggcgcgtcgt ggcgagggac ggtcctgggc tgagcccggg	240
tacccttggc ccctctacgg taatgagggc tgcgggtggg cgggatggct cctgtccccc	300
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aaggtcatcg atacccttac atgcgggttc gccgacctca tggggtacat tccgctcgtc	420
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gggattaact tcgcaacagg gaatttacct gggttgcctt tttctatctt cttgcttget	540
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ccggtgactc cgacagtggc ggtcagtcac gtcgggtgcga ccaccgcac gatccgcggg	780
cacgtggatc tgctgggtgg tacggctaca ttgtgttcgg cactttacgt cggtgacctt	840
tgcggggcag ttttctcgt aggacaagca ttcacattca gaccccgacg ccaccagaca	900
gttcagcatt gcaactgctc actgtaccca ggcatgttt caggtcacat gatggct	957

<210> 218
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 218

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ggcccaagat tgggtgtgcg cgcagttcgt aaaacttccg agcggtcaga accccgcaac    180
cggcggcagc ctatcccca ggacagtcgg agcgagggcc ggtcctgggc tcagcctggg    240
tacccttggc ctcttttatgg caatgagggc tgtgggtggg caggatggct cttgtccccc    300
cgcggtctct ggccatcttg gggccccaat gacccccggc gaaggctctg caacctgggt    360
aaagtcatcg ataccctaac gtgcggattc gccgatctca tggggtacat tccgctcgtc    420
ggcgtccttg tagggggcgt cgcaagagct ctgcacatg gtgtgagagc ccttgaggac    480
ggaataaaatt tcgcaacagg gaatttaccg ggttgcctct tctctatctt cttgcttget    540
ttgctctctt gcttgggtctg tctgtctgca gggattgaat accggaatgt gtctggcctc    600
tacgtgtctc ccaacgactg ctctaacggc agtatcgtgt atgaggcccc tgaagtcac    660
ttgcacttgc caggtttgtg gccctgcgtt caatcaggca actcctcgca atgctggatt    720
ccggtggcac caacagtggc ggttaagtac gctggcgcga ccactgcac gatccgcagt    780
catgtggatc tgetgggtgg agctgctacg ttgtgctccg cgtgttatgt tggcgatatg    840
tgtggagccg tcttcttggg gggacagget ttcaccttca gacctcgtca gcacaacacg    900
gtgcagacct gcaattgctc actgtaccct ggtcacatat caggacacag gatggct      957
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<210> 219

<211> 957

<212> DNA

<213> hepatitis C virus

<400> 219

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ggcccaagat tgggtgtgcg cgcaactcgt aagaattcag agcggtcaca accccgcgga    180
cggcgacagc ctattcccaa ggacgcgccg agcggaggac ggtcctgggc gcagcctggg    240
tacccttggc cctctatagg taacgagggc tgcgggtggg cagggtggct tctgtctcct    300
cgcggtctcc gaccgagttg gggccccaac gacccccggc gaaggctccg caatttgggt    360
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aaggtcatcg acactctcac atgcgggttc gccgatctca tggggatatat tccgctcgtc	420
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ggaataaatt ttgcaacagg gaaccttccc gggttgcctt tttctatctt cttgcttgc	540
ctgctgtcat gcttgccttg cctgcagtc gggttggagg ttgcgaacgc atccggtctc	600
tacatgctca ccaatgactg ctcaaacagc agcatagtat atgaggcgga agatgtgac	660
ctgcacatgc ctgggttgcgt tccctgcgtg cagaacggca acacatcgga gtgctggacc	720
ccggcgacac caacggtggc agtcagatac gctggtgcaa cgacggcttc cgtacggga	780
cacgtggatt tgctagtcgg cagtgcact ctgtgctccg cgtctatgt cggtgacct	840
tgcggggccg tcttcttgt ggggcaggcc ttacattca ggctcgtcg tcatacgact	900
gtccagacct gcaactgctc gttgtacca gccatatca caggacatcg catggca	957

<210> 220
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 220	
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gacgtcaagt tcccgggcgg tgggcagatc gttggtggag tatacgtatt gccgcgcagg	120
ggcccacgat tgggtgtgcg cgcagtgcgt aaatcttccg agcggtcgca acctcgcgga	180
cggcggcagc ctatcccaa ggcaagccga agcaggggcc ggtcctgggc ccagcctggg	240
taccttggc cctctatgg gaatgagggc tgtgggtggg caggatggct cctgtctccc	300
cgtggctccc gccctagtgt gggcccaaat gacccccggc gtagatcac caacttgggt	360
aaggtcatcg atacctcac gtgtggattc gccgatctca tggggtacat tccgctcggt	420
ggtgcccccg tagggggcgt cgcaagggcc ctagcacatg gtgtgagggc tcttgaggac	480
ggaataaact ttgcaacagg gaatttgccc gggttgcctt tttctatctt ccttcttgc	540
ctcttctcat gcttggtttc cccgcagcg gggctagagt acaggaacac gtcgggcta	600
tacatactta ccaacgactg ctctaacagc agcatcgtgt atgaggetga taatgtcatc	660
ctgcacatgc ccgctgtgt gccctgcact cgcgagggta accagtcaag gtgctggacg	720
ccagtaacac cgacagtggc tgtcaaacat cctgggcgag tcaccgcac aatccgcagg	780

catgtggatt	tgatgggtggg	tgcagccacg	ctgtgttcag	cactctatgt	tggagatttg	840
tgcggggctg	ttttccttgt	gggccaagcg	ttcactttca	gagctcggca	acattatacc	900
gtccagttgt	gcaattgctc	actataccca	ggacacatta	caggacatca	tatggct	957

<210> 221
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 221						
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gacgtaaagt	tcccgggtgg	tggccagatc	gttggcggag	tttacttggt	gccgcgcagg	120
ggccccaggt	tgggtgtgcg	cgcgactcga	aagacttcgg	agcggtcgca	acctcgtggc	180
aggcgtcaac	ctatcccca	ggcgcgccag	ccagagggca	gacccctggg	gcagcccg	240
tacccttggc	ccctctatgg	caatgagggc	tgcgggtggg	caggggtggc	cctgtctcct	300
cgcggctctc	ggccatcttg	gggccccaat	gatccccggc	ggagatcgcg	caatctgggt	360
aaggctcatg	ataccctgac	gtgcggcttc	gccgacctca	tgggatacat	cccgatcgtg	420
ggcgcggccg	tggggggcgt	cgcaggggt	ctggcgcgat	gcgtcagggc	tgtggaggac	480
gggattaact	atgcaacagg	gaatcttccc	ggttgcctct	tctctatctt	ccttttggca	540
cttctttcgt	gcctcactgt	tccagcgtcg	gctgagcact	accggaatgc	ttcgggcac	600
tatcacatca	ccaatgattg	tccgaattcc	agtatagtct	atgaagctga	ccatcacatc	660
ctacacttgc	cgggggtgct	acctgtgtg	atgactggga	acacatcgcg	ttgctggacg	720
cgggtgacgc	ctacagtggc	tgtcgcaac	ccgggcgctc	cgtttgagtc	gttcgggcga	780
catgtggact	taatggtagg	cgcggccact	ttgtgttctg	ccctctatgt	tggggacctc	840
tgcggagggtg	ccttctgat	ggggcagatg	atcacttttc	ggcgcgctcg	ccactggacc	900
acgcaggagt	gcaattgttc	catctacact	ggccatatca	ccggccacag	gatggcg	957

<210> 222
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 222

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atgagcacia atcctaaacc tcaaagaaaa accaaacgta acaccaaccg tcgccccatg      60
gatgtgaaat tcccggggcg cgccagatc gttggcgag tttacttget gccgcgcagg      120
ggcccccggt tgggtgtgcg cgcagctcgg aagacttcgg agcggtcaca acctcgtggc      180
aggcgtcagc ctatcccaaa ggcgcgcggg tccgagggca ggtcctgggc tcagccccgg      240
taccttggc ccccttacgg caatgagggc tgtgggtggg cagggtggct cctgtcccc      300
cgcggttcca ggccgtcttg gggcccaat gatccccggc gtaggtcccg taatctgggt      360
aaagtcatcg ataccctgac gtgtggcttc gccgacctca tgggatacat tccgctcgta      420
ggcgccccctg tgggtggcgt cgccagggcc ctggcgcatg gcgtcagggc cgtggaggac      480
ggaattaaat acgcaacagg gaaccttctt ggttgccttt tctctatctt tcttcttgca      540
cttctctcgt gcttgacaac accagcatct gccgtgcaat accggaatgc ttggggcgtc      600
tatcatgtca ccaatgattg ccctaacc agcatagtgt acgagacgga gcaccacatc      660
atgcacttgc cagggtgtgt cccctgtgtg cggacggaga atacttctcg ctgctgggtg      720
cccttgaccc ccaactgtggc cgcgccttat cccaacgcac cgttagagtc catgcgcagg      780
catgtagacc tgatgggtggg tgcggctact atgtgttccg ccttctacat tggagatctg      840
tgtggaggcg tcttcctagt gggccagctg ttgcacttcc gaccgcgcgg gcaactggacc      900
accaggatt gcaactgctc catctatcct ggtaacgtct cgggccacag gatggcc      957
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<210> 223

<211> 957

<212> DNA

<213> hepatitis C virus

<400> 223

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gacgttaagt tcccggggcg tggccagatc gttggcgag tttacttgtt gccgcgcagg      120
ggccccaggt tgggtgtgcg cgcgactagg aagacttcgg agcggtcgca acctcgtggg      180
agacgtcagc ctatcccaaa ggcacgtcga tctgagggaa ggtcctgggc tcagccccgg      240
taccatggc ctctttacgg taatgagggg tgcgggtggg cgggatggct cctgtcacct      300
cgtggctctc gaccgtcttg gggcccaat gatccccggc gaaggctccg caacttgggt      360
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aaggatcatcg ataccctaac ctgcggcttt gccgacctca tgggatacat cccgctcgta	420
ggcgcccccg tgggtggcgt cgccagggcc ctggcacacg gtgttagggc tgtggaggac	480
gggatcaatt atgcgacagg gaattctccc ggttgccttt tctctatctt cttcttggca	540
cttctttcgt gctgactgt tcccacctcg gccgtcaact atcgcaatgc ctcgggcatc	600
tatcacatca ccaatgactg cccgaactcg agcatagtgt acgagaccga gcaccacatc	660
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gccctcactc ccaccgtggc ggcgccttac atcggcgtc cgttgaatc cctccggagt	780
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tgcggtggcg ttttttggg tggtcagatg ttctctttcc agccgcgcg ccactggact	900
acgcaggact gcaattgttc catctacgcg gggcacgtta cgggccacag gatggca	957

<210> 224
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 224	
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ggccctagat tgggtgtgcg cgcgactagg aagacttcgg agcggtcgca acctcgtggg	180
aggcgccagc ctatcccca ggcgcgcca ctcgagggtg ggtcctgggc tcagcctggg	240
tatccttggc ccctttacgg caatgagggc tgcgggtggg cgggatggct cctgtcacc	300
cgtggctctc ggccgtcttg gggccgaat gatccccggc ggagggtccg caacttgggt	360
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ggcgcccccg tgggtggcgt cgccagagcc ctggcgcatg gcgtcaggct tctggaggac	480
ggggtcaatt atgcaacagg gaattctccc ggttgccttt tctctatctt cctcttggca	540
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taccatgtca ccaacgattg cccgaactcg agcatagtct atgaaaccga ttaccacatc	660
ttacacctcc cgggatgcgt tcttgcgtg agggaaggga acaagtctac atgctgggtg	720

tctctcacc	ccaccgtggc	tgcgcaacat	ctgaatgctc	cgcttgagtc	tttgagacgt	780
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tgtgggggtg	tgttcttggt	cggtcaactg	ttcaccttcc	aacctcgccg	ccactggacc	900
acccaagact	gcaattgttc	catctacaca	ggacatatca	caggacacag	aatggct	957

<210> 225
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 225						
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ggccctaggt	tgggtgtgcg	cgcgactcgg	aagacttcgg	agcggtcgca	acctcgtggg	180
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cgcgggtctc	ggcgtcttg	gggcctaata	gatccccggc	ggaggtcccg	caacctgggt	360
aagggtcatc	ataccctaac	atgcggcttc	gccgacctca	tgggatacat	cccgcttgta	420
ggcgcccccg	tgggtggcgt	cgcagagcc	ctggcacacg	gtgttagggc	tgtggaagac	480
gggatcaact	acgcaacagg	gaatctcccc	ggttgcctct	tttctatctt	cctcttggca	540
cttctctcgt	gcctcactgt	tccgcgctcg	ggcgttaact	atcgcaatgc	ttcgggcgtt	600
tatcacatca	ccaacgactg	ccggaatgcg	agcatagtgt	acgagaccga	caatcacatc	660
ttacacctcc	caggggtgcgt	acctgtgtg	aagaccggga	accagtcgcg	gtgttgggtg	720
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tgcggtggt	tattcttggt	aggccaaatg	ttcaccttcc	aaccgcgacg	ccactggacg	900
accaggaact	gtaattgttc	catctacgca	gggcatatta	cgggcatatg	gatggct	957

<210> 226
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 226
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ggccctagga tgggtgtgcg cgcgactcgg aagacttcgg aacggtcgca acccgtgga 180
cggcgtcagc ctattcccaa ggcgcgccag cccacgggcc ggtcctgggg tcaaccggg 240
tacccttggc ccctttacgc caatgagggc ctgggtggg cagggtggt gctctccct 300
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gtgcagaact gcaactgttc catctacagt ggccatgtta ccggccaccg gatggca 957

<210> 227
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 227
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ggcccccggt tgggtgtgcg cgcgacgaga aagacttcgg agcgatccca gccagaggc 180
aggcgccaac ctataccaaa ggcgcgccag cccacgggca ggcactgggc tcagcccgga 240

tacccttggc ctctttatgg aaacgagggc tgtgggtggg caggttggt cctgtcccc	300
cgcggctccc ggccacattg gggccccaat gacccccggc gtcgatcccg gaatttgggt	360
aaggtcatcg ataccctaac gtgtgggttc gccgatctca tggggtacat tcccgctgtg	420
ggcgcgcctt tgggcggcgt cgcggctgcg ctgcacatg gcgtgagggc aatcgaggac	480
gggatcaatt atgcaacagg gaatctcccc ggttgcctct tctctatctt ccttttggca	540
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taccatctca caaatgattg ccccaactcc agcatcgtgc tggaggcgga tgctatgac	660
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gctgtgaccc ccaccctggc cataccaaat gcttccacgc ccgcaacggg attccgcagg	780
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tgtggctctc tctttttggc gggacaacta ttcaccttc agccccgcgc tcattggact	900
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<210> 228
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (383)..(383)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (387)..(387)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (924)..(924)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (928)..(928)
 <223> n represents any nucleotide

<400> 228
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ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacggtccca gcctagaggc 180
aggcgccagc ccataccaaa ggtacgccag ccgacaggcc gtagctgggg tcaacccggc 240
tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtccccc 300
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aaggtcatcg atacccttac atnccgncta gccgacctca tggggtacat ccctgtcta 420
ggagggccgc ttggcggcgt tgcggctgcc ctggcgcatg gcgttagggc aatcgaggac 480
ggggtcaatt acgcaacagg gaatcttctt ggttgcctct tttctatctt cctcttagca 540
ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggac 600
taccatctta ccaatgactg ctgaacaac agcatcgttt ttgaggcgga gaccatgata 660
ctgcatcttc caggtttgtgt cccatgtatc aaggcgggga atgagtcacg atgttggctc 720
cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgcgga 780
cacgtagacc tcctcgttgg ggcagcggca ttttgttcgg ccatgtacat cggagacctc 840
tgtggtagca taatcttggt agggcagctt tttactttca ggcctaagta ccatcaggtt 900
accagggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 229
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 229

Met Ser Thr Asn Pro Lys Pro Gln Lys Lys Asn Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
180 185 190

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Ala Ile Leu His Thr Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Ala Ser Arg Cys Trp Val
225 230 235 240

Ala Met Thr Pro Thr Val Ala Thr Arg Asp Gly Lys Leu Pro Ala Thr
245 250 255

Gln Leu Arg Arg His Ile Asp Leu Leu Val Gly Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg His Trp Thr Thr Gln Gly Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 230
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 230

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr
180 185 190

Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys Ser
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Ser Asn Phe Ser Arg Cys Trp Val
225 230 235 240

Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ser Ser Ile Pro Thr Thr
245 250 255

Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Leu Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg Tyr Glu Thr Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala
305 310 315

<210> 231

<211> 319

<212> PRT

<213> hepatitis C virus

<400> 231

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Thr Pro Val Ser Ala Ala
180 185 190

Glu Val Lys Asn Ile Ser Thr Gly Tyr Met Val Thr Asn Asp Cys Thr
195 200 205

Asn Asp Ser Ile Thr Trp Gln Leu Gln Ala Ala Val Leu His Val Pro

210 215 220
 Gly Cys Val Pro Cys Glu Lys Val Gly Asn Thr Ser Arg Cys Trp Ile
 225 230 235 240
 Pro Val Ser Pro Asn Val Ala Val Gln Gln Pro Gly Ala Leu Thr Gln
 245 250 255
 Gly Leu Arg Thr His Ile Asp Met Val Val Met Ser Ala Thr Leu Cys
 260 265 270
 Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Met Leu Ala Ala
 275 280 285
 Gln Met Phe Ile Val Ser Pro Gln His His Trp Phe Val Gln Asp Cys
 290 295 300
 Asn Cys Ser Ile Tyr Pro Gly Thr Ile Thr Gly His Arg Met Ala
 305 310 315

<210> 232
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 232

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15
 Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30
 Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45
 Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60
 Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Thr Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Arg Val Ile Asp Thr Ile Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala Val
180 185 190

Glu Val Arg Asn Ile Ser Ser Ser Tyr Tyr Ala Thr Asn Asp Cys Ser
195 200 205

Asn Asn Ser Ile Thr Trp Gln Leu Thr Asp Ala Val Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Glu Asn Asp Asn Gly Thr Leu His Cys Trp Ile
225 230 235 240

Gln Val Thr Pro Asn Val Ala Val Lys His Arg Gly Ala Leu Thr Arg
245 250 255

Ser Leu Arg Thr His Val Asp Met Ile Val Met Ala Ala Thr Ala Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile Leu Ser
275 280 285

Gln Ala Phe Met Val Ser Pro Gln Arg His Asn Phe Thr Gln Glu Cys
290 295 300

Asn Cys Ser Ile Tyr Gln Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 233
<211> 319
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (319)..(319)
<223> Xaa represents any amino acid

<400> 233

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val

130	135	140
Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp 145 150 155 160		
Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile 165 170 175		
Phe Leu Ser Ala Leu Leu Ser Cys Ile Ser Val Pro Val Ser Ala Val 180 185 190		
Glu Val Lys Asn Thr Ser Thr Ser Tyr Met Val Thr Asn Asp Cys Ser 195 200 205		
Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr Pro 210 215 220		
Gly Cys Val Pro Cys Glu Gln Ile Gly Asn Ala Ser Arg Cys Trp Val 225 230 235 240		
Pro Val Ser Pro Asn Val Ala Ile Arg Gln Pro Gly Thr Leu Thr Lys 245 250 255		
Gly Leu Arg Ala His Val Asp Val Ile Val Met Ser Ala Thr Leu Cys 260 265 270		
Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Ile Ala Ala 275 280 285		
Gln Ala Val Ile Ala Ser Pro Gln Arg His Thr Phe Val Gln Glu Cys 290 295 300		
Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa 305 310 315		

<210> 234
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 234

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Pro Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Gly Leu
180 185 190

Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val Thr Asn Asp Cys Gln
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro
210 215 220

Gly Cys Val Pro Cys Glu Glu Lys Gly Asn Ile Ser Arg Cys Trp Ile
225 230 235 240

Pro Val Ser Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Leu Thr Lys
245 250 255

Gly Leu Arg Thr His Ile Asp Thr Ile Ile Ala Ser Ala Thr Phe Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Leu Ala Ser
275 280 285

Gln Val Phe Ile Ile Ser Pro Gln His His Lys Phe Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 235
<211> 419
<212> PRT
<213> hepatitis C virus

<400> 235

Met Ser Thr Leu Pro Lys Pro Gln Arg Gln Thr Lys Arg Asn Thr Leu
1 5 10 15

Arg Arg Pro Gln Asn Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Lys Gln Arg His Leu
50 55 60

Ile Pro Lys Ala Arg Ser Arg Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Lys Gly Cys Gly Leu Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Phe Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Leu Gly Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Phe Ser Cys Leu Thr Cys Pro Ala Ser Gly Leu
180 185 190

Glu Tyr Thr Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys Ser
195 200 205

Asn Gly Ser Ile Val Tyr Glu Ala Glu Asp Val Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Thr Thr Gly Asn Gln Ser Ser Cys Trp Thr
225 230 235 240

Thr Val Ser Thr Thr Val Ala Val Arg Thr Leu Gly Val Thr Thr Ala
245 250 255

Ser Ile Arg Thr His Val Asp Met Leu Val Gly Ala Arg Gln Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Phe Gly Ala Val Phe Leu Val Gly
275 280 285

Gln Ala Phe Thr Phe Arg Pro Arg Arg His Thr Thr Val Gln Thr Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala Trp
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ile Gly Leu Val Ile Ser His
325 330 335

Leu Met Arg Leu Pro Gln Thr Leu Phe Asp Leu Val Ser Gly Thr His
340 345 350

Trp Gly Val Met Ala Gly Leu Ala Tyr Phe Ser Met Gln Gly Asn Trp
355 360 365

Ala Lys Val Val Ile Val Leu Ile Met Phe Ser Gly Val Asp Ala Asn
370 375 380

Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu Thr
385 390 395 400

Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val Asn Ser
405 410 415

Asn Gly Ser

<210> 236
<211> 383
<212> PRT
<213> hepatitis C virus

<400> 236

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Leu Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Leu Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
180 185 190

Asn Tyr Arg Asn Ser Ser Gly Val Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Thr Asp Tyr His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Lys Ser Thr Cys Trp Val
225 230 235 240

Ser Leu Thr Pro Thr Val Ala Ala Gln His Leu Asn Ala Pro Leu Glu
245 250 255

Ser Leu Arg Arg His Val Asp Leu Met Val Gly Gly Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Gly Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys

290

295

300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala Trp
 305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ala Thr Leu Val Leu Ala Gln
 325 330 335

Leu Met Arg Ile Pro Gly Ala Met Val Asp Leu Leu Ala Gly Gly His
 340 345 350

Trp Gly Ile Leu Val Gly Ile Ala Tyr Phe Ser Met Gln Ala Asn Trp
 355 360 365

Ala Lys Val Ile Leu Val Leu Phe Leu Phe Ala Gly Val Asp Ala
 370 375 380

<210> 237
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (102)..(102)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (105)..(105)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (114)..(114)
 <223> Xaa represents any amino acid

<400> 237

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Xaa Ser Arg Xaa Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser Ala Val
180 185 190

Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys Pro
195 200 205

Asn Ala Ser Ile Val Tyr Glu Thr Glu Asn His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Ala Gly Ala Pro Leu Glu
245 250 255

Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 238
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 238

Met Ser Thr Asn Pro Lys Leu Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro

100	105	110
Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys 115 120 125		
Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val 130 135 140		
Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp 145 150 155 160		
Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile 165 170 175		
Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Gly Val 180 185 190		
Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp Cys Pro 195 200 205		
Asn Ala Ser Ile Val Tyr Glu Thr Asp Asn His Ile Leu His Leu Pro 210 215 220		
Gly Cys Val Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val 225 230 235 240		
Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Val Gly Ala Pro Leu Glu 245 250 255		
Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val Cys 260 265 270		
Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly 275 280 285		
Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys 290 295 300		
Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala 305 310 315		

<210> 239
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 239

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala
305 310 315

<210> 240
<211> 383
<212> PRT
<213> hepatitis C virus

<400> 240

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Gln Gly Arg His Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro His Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu
180 185 190

Thr Tyr Gly Asn Ser Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Leu Glu Ala Asp Ala Met Ile Leu His Leu Pro
210 215 220

Gly Cys Leu Pro Cys Val Arg Val Asp Asp Arg Ser Thr Cys Trp His
225 230 235 240

Ala Val Thr Pro Thr Leu Ala Ile Pro Asn Ala Ser Thr Pro Ala Thr
245 250 255

Gly Phe Arg Arg His Val Asp Leu Leu Ala Gly Ala Ala Val Val Cys
260 265 270

Ser Ser Leu Tyr Ile Gly Asp Leu Cys Gly Ser Leu Phe Leu Ala Gly

275

280

285

Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp Cys
 290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Val Thr Gly His Arg Met Ala Trp
 305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Thr Thr Leu Val Leu Ser Ser
 325 330 335

Ile Leu Arg Val Pro Glu Ile Cys Ala Ser Val Ile Phe Gly Gly His
 340 345 350

Trp Gly Ile Leu Leu Ala Val Ala Tyr Phe Gly Met Ala Gly Asn Trp
 355 360 365

Leu Lys Val Leu Ala Val Leu Phe Leu Phe Ala Gly Val Glu Ala
 370 375 380

<210> 241
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 241

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Glu His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Ser Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
 50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Tyr His Ile Leu His
85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met
180 185 190

Ala

<210> 242
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 242

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Leu Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Val His His Ile Leu His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro Tyr Leu Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ile Phe Leu
145 150 155 160

Ala Gly Gln Met Phe Thr Phe Arg Pro Arg Leu His Trp Thr Thr Gln
165 170 175

Glu Cys Asn Cys Ser Thr Tyr Pro Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 243
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 243

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 244
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 244

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Val Leu Leu Ser Arg Leu Thr Val Pro Ala Ser
50 55 60

Ala Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys
100 105 110

Trp Ile Pro Leu Thr Pro Thr Val Ala Val Pro Tyr Leu Gly Ala Pro
115 120 125

Leu Thr Ser Val Arg Gln His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp His Cys Gly Gly Val Phe Leu
145 150 155 160

Ala Gly Gln Met Val Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 245

<211> 149

<212> PRT

<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (120)..(120)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (134)..(134)
<223> Xaa represents any amino acid

<400> 245

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser
1 5 10 15

Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 246
<211> 119
<212> PRT
<213> hepatitis C virus

<400> 246

Tyr His Ile Thr Asn Asp Cys Pro Asn Ser Ser Val Val Tyr Glu Thr
1 5 10 15

Asp His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val Arg Thr
20 25 30

Gly Asn Val Ser Arg Cys Trp Thr Pro Val Thr Pro Thr Val Ala Ala
35 40 45

Val Ser Val Asp Ala Pro Leu Glu Ser Phe Arg Arg His Val Asp Leu
50 55 60

Met Val Gly Ala Ala Thr Leu Cys Ser Val Leu Tyr Val Gly Asp Leu
65 70 75 80

Cys Gly Gly Ala Phe Leu Val Gly Gln Met Phe Thr Phe Gln Pro Arg
85 90 95

Arg His Trp Thr Thr Gln Asp Cys Asn Cys Ser Ile Tyr Thr Gly His
100 105 110

Ile Thr Gly His Arg Met Ala
115

<210> 247
<211> 94
<212> PRT
<213> hepatitis C virus

<400> 247

Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile Arg Arg Pro Gln Asp Val
1 5 10 15

Lys Phe Pro Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Val Leu Pro
20 25 30

Arg Arg Gly Pro Arg Leu Gly Val Cys Ala Thr Arg Lys Thr Ser Glu
35 40 45

Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg
50 55 60

Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr
65 70 75 80

Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp Leu Leu Ser Pro
85 90

<210> 248
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 248

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 249
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 249

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 250
<211> 68
<212> PRT
<213> hepatitis C virus

<400> 250

Thr Asn Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val
20 25 30

Arg Ala Thr Gly Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
50 55 60

Pro Gly Phe Pro
65

<210> 251
<211> 80
<212> PRT
<213> hepatitis C virus

<400> 251

Lys Thr Lys Arg Asn Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro
1 5 10 15

Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly
20 25 30

Pro Arg Leu Gly Val Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln
35 40 45

Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly
50 55 60

Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Asn Glu
65 70 75 80

<210> 252
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 252

Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val
20 25 30

Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
50 55 60

Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Lys
65 70

<210> 253
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 253

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Ala Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro
 100

<210> 254
 <211> 128
 <212> PRT
 <213> hepatitis C virus

<400> 254

Val Glu Val Lys Asp Thr Gly Asp Ser Tyr Met Pro Thr Asn Asp Cys
 1 5 10 15

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr
 20 25 30

Pro Gly Cys Val Pro Cys Glu Arg Thr Ala Asn Val Ser Arg Cys Trp
 35 40 45

Val Pro Val Ala Pro Asn Leu Ala Ile Ser Gln Pro Gly Ala Leu Thr
 50 55 60

Lys Gly Leu Arg Ala His Ile Asp Ile Ile Val Met Ser Ala Thr Val
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Leu Ala
 85 90 95

Ala Gln Val Val Val Val Ser Pro Gln His His Thr Phe Val Gln Glu
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly Arg Ile Thr Gly His Arg Met Ala
115 120 125

<210> 255
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 255

Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys
1 5 10 15

Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val Ile Leu His Thr
20 25 30

Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr Ser Thr Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val Gly Ala Thr Thr
50 55 60

Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly Ala Ala Thr Met
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala Val Phe Leu Val
85 90 95

Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln Thr Val Gln Thr
100 105 110

Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly His Arg Met Ala
115 120 125

<210> 256
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 256

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Thr Ser Arg Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Ala His Pro Gly Ala Pro Leu
50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Met
85 90 95

Gly Gln Met Ile Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu
100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
115 120 125

<210> 257

<211> 128

<212> PRT

<213> hepatitis C virus

<400> 257

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro Leu
50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val
65 70 75 80

Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
85 90 95

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
115 120 125

<210> 258
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 258

Val His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Thr Ser Ile Val Tyr Glu Thr Glu His His Ile Met His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Glu Asn Thr Ser Arg Cys Trp
35 40 45

Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Pro Asn Ala Pro Leu
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met
65 70 75 80

Cys Ser Ala Phe Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Leu Phe Asp Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala
115 120 125

<210> 259
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 259

Ile His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
35 40 45

Val Ala Leu Ser Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Val
50 55 60

Glu Ser Phe Arg Arg His Val Asp Met Met Val Gly Ala Ala Thr Val
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Gly Met Ala
115 120 125

<210> 260
<211> 128
<212> PRT

<213> hepatitis C virus

<400> 260

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His Leu
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
35 40 45

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
50 55 60

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Ala
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met Ala
115 120 125

<210> 261

<211> 169

<212> PRT

<213> hepatitis C virus

<400> 261

Leu Ala His Gly Val Arg Ala Val Glu Asp Gly Ile Asn Tyr Ala Thr
1 5 10 15

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu
20 25 30

Ser Cys Leu Thr Val Pro Ala Ser Ala Val His Tyr His Asn Thr Ser
35 40 45

Gly Ile Tyr His Leu Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Phe
50 55 60

Glu Ala Val His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val
65 70 75 80

Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu
85 90 95

Ala Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser Met Arg Arg His Val
100 105 110

Asp Leu Met Val Gly Thr Ala Thr Leu Cys Ser Ala Leu Tyr Val Gly
115 120 125

Asp Leu Cys Gly Gly Ile Phe Leu Ala Gly Gln Met Phe Thr Phe Arg
130 135 140

Pro Arg Leu His Trp Thr Thr Gln Glu Cys Asn Cys Ser Thr Tyr Pro
145 150 155 160

Gly His Ile Thr Gly His Arg Met Ala
165

<210> 262
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 262

Val His Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Phe Glu Ala Glu His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp

35

40

45

Ile Ala Leu Thr Pro Thr Leu Ala Ala Pro His Ile Gly Ala Pro Leu
 50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr Leu
 65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ile Phe Leu Val
 85 90 95

Gly Gln Met Phe Asn Phe Arg Pro Arg Leu His Trp Thr Thr Gln Glu
 100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
 115 120 125

<210> 263
 <211> 128
 <212> PRT
 <213> hepatitis C virus

<400> 263

Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys
 1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His Ala
 20 25 30

Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys Trp
 35 40 45

Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val Thr
 50 55 60

Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala Leu
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val
 85 90 95

Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asp
 100 105 110

Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met Ala
 115 120 125

<210> 264
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 264
 ctccacagtc actgagagcg acatccgtac ggaggaggca atctaccaat gttgtgacct 60
 cgacccccaa gcccgcggtg ccatcaagtc cctcaccgag aggccttatg ttgggggccc 120
 tottaccaat tcaagggggg agaactgcgg ctatcgagg tgccgcgcga gcggcgact 180
 gacaactagc tgtggtaaca cctcacttg ctacatcaag gcccgggcag cctgtcgagc 240
 cgcagggtc caggactgca ccatgctcgt gtgtggcgac gacttagtcg ttatctgtga 300
 aagcggggg gtccaggagg acgcggcgag cctgagagcc 340

<210> 265
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 265
 ctcaacggtc actgagaatg acatccgtac tgaggaatca atttaccaat gttgtgactt 60
 ggcccccgaa gccaggcagg ccataaggtc gctcacagag cggccttatg tcgggggtcc 120
 cctgactaat tcgaaggggc agaactgcgg ttatcgccgg tgccgcgcaa gtggcggtgct 180
 gacgactagc tgccgcaaca cctcacatg ttacttgaag gccactgcgg cctgtcgagc 240
 tgcaaagctc caggactgca cgatgctcgt gaacggagac gaccttgctg ttatctgtga 300
 gagtgcggga acccaggagg atgcggcggc cctacgagcc 340

<210> 266

<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(1)
<223> n represents any nucleotide

<400> 266
ntcaacagtc accgagaacg acatccgtgt tgaggagtca atttaccaat gttgtgactt 60
ggcccccgag gccagacagg ccataaagtc gctcacagag cggctttata tcgggggtcc 120
cctgactaat tcaaaggggc agaactgtgg ctatcgccga tgccgcgcaa gcggcgtgct 180
gacgaccagc tgcggtaata cccttacatg ttacctaaag gcctctgcag cctgtcgagc 240
tgcgaaagctc caggactgca cgatgctcgt gtgcggggac gaccttgctg ttatctgtga 300
aagcgcgga acccaagagg acgcggcgag cctacgagtc 340

<210> 267
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 267
ctcaaccgtc actgagagag acatcaggac tgaggagtcc atatatcggg cttgttcctt 60
gcccgaggag gccacactg ccatacactc actgactgag agactttacg tgggagggcc 120
catgttcaac agcaagggcc agacctgcgg gtacaggcgt tgccgcgcca gcggggtgct 180
taccactagc atggggaaca ccatcacatg ctatgtgaaa gccttagcgg cctgtaaggc 240
tgcagggata attgcgcca caatgctggt atgcggcgat gacttggttg tcatctcaga 300
gagccagggg accgaggagg acgagcggaa cctgagagcc 340

<210> 268
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 268
ctcaaccgtc acggagaggg acataagaac agaagaatcc atatatcagg cttgttctct 60
gcctcaagaa gccagaactg tcatacactc gctcactgag agactttacg taggagggcc 120
catgacaaac agcaaagggc aatcctgcgg ctacaggcgt tgccgcgcaa gcggtgtttt 180
caccaccagc atggggaata ccatgacatg ttacatcaaa gcccttgag cgtgtaaggc 240
tgcagggatc gtggaccctg ttatgttggg gtgtggagac gacctggtcg tcatctcaga 300
gagccaaggt aacgaggagg acgagcgaaa cctgagagct 340

<210> 269
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 269
ctcaactgtc actgaacagg acatcagggt ggaagaggag atataccaat gctgtaacct 60
tgaaccggag gccaggagag tgatctcctc cctcacggag cggctttact gcgggggccc 120
tatgttcaac agcaaggggg cccaatgtgg ttatcgccgg tgccgtgcca gtggagtctt 180
gcctaccagc ttcggaaca caatcacttg ttacatcaag gccacagcgg ctgcgaaggc 240
cgcaggcctc cggaaccggg actttcttgt ctgcggagat gatctggtcg tagtggctga 300
gagcgatggc gtcgatgagg atagagcagc cctgagagcc 340

<210> 270
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 270
ctctactgtc actgaacatg acatcaggac ggaggaggag atataccaat gctgtgacct 60
tgagccagag gctcggaagg cgatcagcgc totcacagag cggctgtaca toggagggtc 120
catgtacaac agtaaggggc tccagtgcgg ctatcgccgc tgccgcgcca gcggcgtctt 180
gcctaccagc ttcggaata caataacctg ttacatcaag gccactgcag ccagcagggc 240

tgcggtctc aaagacccat ctttccttgt ctgcggagac gatttggtgg ttgtatctga	300
aagctgcggc gtcgaggagg acagagcagc tctgcgagcc	340

<210> 271
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 271	
ctccactgta accgaaaagg acatcagggc cgaggaggag gtctatcagt gttgtgacct	60
ggagcccgaa gcccgcaagg caattaccgc cctaacagag agactctacg tgggcgggtcc	120
catgcataac agcaagggag acctgtgcgg gtatcgcaga tgcgcgcaa ggcgcgtcta	180
caccaccagc ttcggaaca cactgacgtg ctacctcaa gccacagccg ctatcaaagc	240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtg tcacgctga	300
gagcgatggc gtagaggagg acaaacgacc cctcggagcc	340

<210> 272
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 272	
ctccactgta accgaaaagg acatcagggc cgaggaggag gtatatcagt gttgtgacct	60
ggagcccgag gcccgagag caattaccgc cctaacagag agactctacg tgggcgggtcc	120
catgcataac agcaggggag acctgtgcgg gtatcgcaga tgccgtgcga ggcgcgtcta	180
caccaccagc ttcggaaca cactgacgtg ctatctcaa gccacagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggt ctgtggtgat gacctggtc tcattgctga	300
aagcgatggc gtagaggagg acaaacgagc cctcggagcc	340

<210> 273
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 273
ctccactgta accgaaaaag acatcagggg cgaggaggag gtatatcagt gttgtgacct 60
ggagcccgaa gcccgcaagg taattaccgc cctaacagag agactctatg tgggcgggtcc 120
catgcataat agcaaaggag acctgtgogg gtatcgcaga tgccgcgcaa ggggcgtcta 180
caccaccagc ttccggaaca cactgacgtg ctatctcaaa gcctcagccg ccatcagggc 240
gtcagggctg agagactgca ctatgtgtgt ctatggtgac gacctgggtcgc tcattgccga 300
gagcgatggc gtagaggagg acaaacgagc cctcggagtc 340

<210> 274
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 274
ctccactgta accgaaaaag acatcagggg cgaggaggag gtgtatcagt gttgtgacct 60
ggagcccgag gcccgcaagg caattactgc cctaacagag agactctatg tgggcgggtcc 120
catgcataac agcaagggag acctgtgtgg gtatcgcaga tgccgcgcaa ggggcgtcta 180
caccaccagc ttccggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcagagc 240
ggcgggggctg agagactgca ccatgttggg ctgtggtgat gacctgggtcgc tcacgctga 300
gagcgatggc gttgaggagg acaaacgagc cctcggagcc 340

<210> 275
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (329)..(329)
<223> n represents any nucleotide

<400> 275
ctccactgtg actgagagag acatcaaggt cgaagaagaa gtctatcagt gttgtgatct 60
ggagcccgag gcccgcaagg taatagccgc cctcacggag agactctacg tgggcggccc 120
catgcataac agcaaggagg acctttgcgg gtatcgtaga tgccgcgcga gcggcgtata 180
caccaccagc ttcggaaca caatgacgtg ctaccttaag gcctcagcag ccatcagggc 240
tgcggggcta aaggattgca ccatgctggt ttgcggtgac gacctagtcg tgatcgccga 300
gagcgggtggc gttgaggagg acaaacganc cctcggagct 340

<210> 276
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 276
ctccacgggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60
ggagcccgaa gcccgcaagg tgatatccgc cctaaccgaa agactctacg tgggcgggtcc 120
catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180
caccaccagc ttcggaaca ctgtaacgtg ttatctcaag gccgttgcgg ctactagggc 240
cgcaggtctg aaaggttgca gcatgctggt ttgtggagac gacttagtcg tcctctgcga 300
gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 277
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 277
ctcgaccgtt accgaacatg acataatgac tgaagagtct atttaccaat cattgtactt 60
gcagcctgag gcgcgtgtgg caatacggtc actcacccaa cgccgtgtact gtggaggccc 120
catgtataac agcaaggggc aacaatgtgg ttatcgtaga tgccgcgcga gcggcgtctt 180
caccactagt atgggaaca ccatgacgtg ctacattaag gctttagcct cctgtagagc 240
cgcaaagctc caggactgca cgctcctggt gtgtggtgat gatcttgtgg ccatttgcca 300

gagccagggg acgcaagagg ataaagcgag cctgagagcc

340

<210> 278
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 278

Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Leu Arg
100 105 110

Ala

<210> 279
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 279

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ala Leu Arg
100 105 110

Ala

<210> 280
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 280

Ile Tyr Gln Cys Cys Asp Leu His Pro Asp Ala Arg Ala Ala Ile Lys
1 5 10 15

Asn Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys
20 25 30

Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr
35 40 45

Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala

50

55

60

Cys Arg Ala Ala Gly Leu Arg Asp Cys Thr
 65 70

<210> 281
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 281

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg
 1 5 10 15

Ala Cys Ser Leu Pro Glu Glu Ala His Thr Ala Ile His Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
 65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
 100 105 110

Ala

<210> 282
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 282

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ala Cys Ser Leu Pro Gln Glu Ala Arg Thr Val Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Asn Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 283

<211> 74

<212> PRT

<213> hepatitis C virus

<400> 283

Ile Tyr Gln Ser Cys Ser Leu Pro Glu Glu Ala Arg Thr Ala Ile His
1 5 10 15

Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys
20 25 30

Gly Gln Ser Cys Gly Tyr Arg Arg Cys Arg Ala Ser Ala Val Leu Thr
35 40 45

Thr Ser Met Gly Asn Thr Leu Thr Cys Tyr Val Lys Ala Arg Ala Ala
50 55 60

Cys Asn Ala Ala Gly Ile Val Ala Pro Thr
65 70

<210> 284
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 284

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Leu Asn Ser Lys Gly Gln Thr
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Gln Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 285
<211> 71
<212> PRT

<213> hepatitis C virus

<400> 285

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Arg Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 286

<211> 71

<212> PRT

<213> hepatitis C virus

<400> 286

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 287
<211> 71
<212> PRT
<213> hepatitis C virus

<400> 287

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 288
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 288

Ser Thr Val Thr Glu His Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Met Tyr Asn Ser Lys Gly Leu Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe

50

55

60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Ser Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Val Ser Glu Ser Cys Gly Val Glu Glu Asp Arg Ala Ala Leu Arg
100 105 110

Ala

<210> 289
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 289

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Lys Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Pro Leu Gly
100 105 110

Ala

<210> 290
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 290

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 291
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 291

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ser Gly Leu Arg Asp Cys Thr Met Leu Val Tyr Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Val

<210> 292

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 292

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 293
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (110)..(110)
<223> Xaa represents any amino acid

<400> 293

Ser Thr Val Thr Glu Arg Asp Ile Lys Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ala Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Xaa Leu Gly
100 105 110

Ala

<210> 294
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 294

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Thr Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Phe Leu Lys Ala Thr Ala Ala Thr Lys Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Arg Arg Ala Leu Gly
100 105 110

Ala

<210> 295
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 295

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
100 105 110

Ala

<210> 296
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 296

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Lys Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Leu Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
 100 105 110

Ala

<210> 297
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (22)..(22)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (8)..(8)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (24)..(24)
 <223> Xaa represents any amino acid

<400> 297

Pro Thr Val Thr Glu Arg Asp Xaa Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asn Leu Glu Xaa Asp Xaa Arg Lys Val Ile Asn Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Ile Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ile Gly Ile Asp Glu Asp Lys Gln Ala Leu Arg
100 105 110

Thr

<210> 298

<211> 113

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (4)..(4)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (109)..(109)

<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (111)..(111)
<223> Xaa represents any amino acid

<400> 298

Ser Thr Val Xaa Glu Arg Asp Ile Arg Thr Glu Gly Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Ala Gly Val Glu Glu Asp Pro Xaa Thr Xaa Arg
100 105 110

Pro

<210> 299
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 299

Val Tyr Gln Cys Cys Asn Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr
1 5 10 15

Ala Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys
20 25 30

Gly Asp Leu Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr
35 40 45

Thr Ser Phe Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala
50 55 60

Ile Arg Ala Ala Gly Leu Arg Asp Cys Thr
65 70

<210> 300
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 300

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Cys Asp Leu Gln Pro Glu Ala Arg Ala Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Arg Leu Arg Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Ser Leu Arg
100 105 110

Ala

<210> 301
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 301

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Leu Tyr Leu Gln Pro Glu Ala Arg Val Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Lys Ala Ser Leu Arg
100 105 110

Ala

<210> 302
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 302

Ser Ala Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg Val
1 5 10